THE INFORMER

A Publication of Computer and Research Services

4th Floor, Melton Building, 10310 - Jasper Avenue, Edmonton T5J 1W4
VOL. 1, NO. 1 JANUARY, 1983

INTRODUCING THE INFORMER

The Computer and Research Services Division of the Alberta Solicitor General proudly presents the first edition of our newsletter, **THE INFORMER**.

Computer and Research Services acts as a systems and research resource to other Divisions in the Department including Correctional Services, Motor Vehicles, Law Enforcement, Administrative Services, Personnel, and the Driver Control Board. The Division itself consists of three branches: the Operations Systems Development Branch, the Systems Support Branch, and the Research and Planning Branch.

THE INFORMER will report on the activities of these branches, including status, descriptions, and highlights of the various projects conducted by our Division. We also welcome contributions to the newsletter from our readers, particularily regarding announcements and articles pertaining to Departmental or external happenings which affect a program area within the Alberta Solicitor General.

THE INFORMER will be published every second month with circulation to: all units of the Alberta Solicitor General, other Government Departments affected by or influencing our projects, and agencies outside of the province involved in the same program areas as the Department.

Alberta
SOLICITOR GENERAL

The Motor Vehicle System (MOVES) when completed will be a main component in the operation of the Motor Vehicles Division of the Alberta Solicitor General. It will automate much of the activity related to the administration of motor vehicle and driver registrations in the province.

MOVES encompasses three major components, the Central Component, the Applications Component and the Intelligent Terminal Component.

CENTRAL COMPONENT

The Central Component is a collection of about fifty assembler programs and forms the framework for MOVES. It provides a development facility and will later provide maintenance and production support to the Application programs. The Central Component is currently in the program development and testing stage. The first nineteen programs have passed unit testing and have undergone a month of integration testing. The entire Central Component is scheduled to be programmed and integration tested by the end of March 1983. It will then be used in development of the application programs.

The Central Component contains programs for:

- signing on and off the system with varying security levels
- leading terminal operators through the system with a series of menu screens and help functions
- defining and changing the appearance of screens
- managing the time and space required by terminal operators requesting simultaneous service
- loading and updating data tables which allow the system to respond quickly to policy and procedural changes
- logging and printing of unusual events occurring during operation of the system
- production of correspondence through a text writer
- communication between the field mini-computers, and the central computer
- logging and displaying "bring forward data" of various types
- implementing electronic mail
- monitoring employee and position records
- reflecting data base changes automatically to all affected programs
- various utility routines to support the basic functions listed above.

(MOVES IN PROFILE continued...)

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APPLICATION COMPONENT

The Application Component consists of approximately one hundred and fifty COBOL programs which will help staff perform the business functions directly related to the operation of the Motor Vehicles Division . The Application Component is being designed to the program specification level and then programmed in the following generic groups. For example, Client Services will be programmed and system tested before program specifications are completed for Vehicle Registration Services. The detailed design activity for the application is now underway and will continue until the end of 1983. Programming and system testing will continue until early 1984.

The services supported by the Application Component fall within the following groups:

- Client Services
- Financial Services
- Inventory Services
- Mail Processing Services
- Microfilm Services
- Driver Licencing
- Vehicle Operator Services
- Vehicle Services
- Vehicle Registration Services
- Enforcement Services
- Accident Claims Services
- Management Services

Future issues of the INFORMER will discuss each of these groups and provide a better perspective on how MOVES will affect Motor Vehicle staff and the motoring public.

INTELLIGENT TERMINAL COMPONENT

The Intelligent Terminal Component consists of several MOBOL programs which will allow Mohawk mini-computers located in the Motor Vehicle Issuing offices to perform certain front counter office operations independent of the central computer. This component complements the front counter and data entry operation of the system, and will allow automated servicing of customers to continue when the central computer or telecommunication network malfunctions. During such times, the mini-computer will store information for later transmission to the central computer. During normal operation the system will produce permanent documents in the issuing offices.

The Intelligent Terminal system's central core has been designed and is currently being programmed. Since it has a complementary front-end function to the Central System, its development will lag slightly behind the Central Systems's schedule. It will, however, be completed by the end of 1983.

Installation of distributed equipment in the first eleven MVD offices is scheduled for the fall of 1983, with network testing completed by the end of the year. Implementation of the system will occur in the MVD offices after the annual vehicle renewal rush in the spring of 1984. This renewal cycle will complete a process to be started in October 1983 and will put the last motor vehicles into a staggered registration plan. In June or July of 1984 the new system will begin handling all vehicle and driver registrations on the staggered basis.

HISTORY OF COMIS

The Correctional Management Information System (COMIS) is a computer system containing information on past and current inmates in Alberta's correctional centres. The system contains demographic information on inmates and monitors their movements through the correctional system.

COMIS was originally conceived in 1975. At that time, a study conducted by Alberta Treasury recommended the development of a central system. In this recommendation, institutional "data collection" forms would be mailed to a central office for data entry and various statistical reports would be produced for distribution. However, the Correctional Services Division of the Alberta Solicitor General required a more operations oriented system whereby timely and relevant information would be available in the remote institutions. The recommendation for development of a central system was therefore not adopted.

In 1977, a feasibility report recommended development of an on-line offender based system. This system would see terminal and printer equipment in each of the jails with on-line data communications to a central offender file of information. This recommendation was accepted by the Correctional Services Division and subsequently implemented in the provincial jails in 1979.

While the original COMIS met many of the information processing and reporting requirements of corrections staff, problems were encountered in 1980 with response times and central computer reliability. This was particularly frustrating in the Edmonton and Calgary Remand Centres due to their high levels of activity. In 1981, continued computer problems necessitated an evaluation of alternatives to the central computer system. This evaluation resulted in the acquisition of two Data General mini computers for installation in the remand centres.

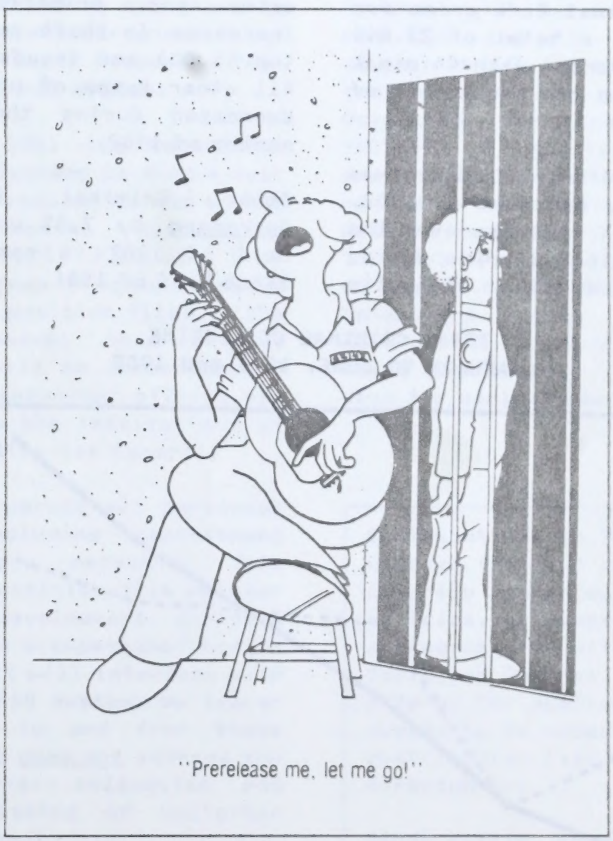
In 1982, the first mini computer was installed in the Edmonton Remand Centre (ERC). Initially, this computer was set up to control the terminals in ERC and to allow them to update and access the main central computer system. The second phase of installation incorporates stand-alone COMIS system processing on the mini computer with a daily batch interface of information between the mini computer and the main central computer system. Development of this second phase of installation took place during 1982 and is in the final user acceptance testing stage.

Since it began operation in 1979, COMIS has experienced major increases in usage. From an initial profile of 20,000 offenders, information is now available on more than 65,000 offenders. User access to the system has also increased significantly. A user friendly report generator package which allows institutional staff to extract customized reports from the central data base caused much of this increase. In addition, to simplify major research projects, a Research File has been developed as an extract from the central data base. Researchers can use standard statistical packages to manipulate the data in the Research File.

Over the life of the system, COMIS development has concentrated on satisfying the requirements of the

operations staff. However, during 1982, COMIS development was directed toward assisting administrative personnel in the institutions. Initially this entailed the development of a Trust Account System to monitor and control inmate funds. Implementation of this system will take place in the institutions during 1983.

In the future, development of COMIS will concentrate on improving and expanding the usefulness of the system to the operations staff in the Correctional Services Division. In addition, as the volume of information captured increases, a structuring of the data will take place. This will entail separate handling of historical and active information. Also, an interface between COMIS and the Canadian Police Information Centre (CPIC) is under development and an interface with the Attorney General Courts system (CAP) is being jointly discussed.



"Prerelease me, let me go!"

CRIME TRENDS IN ALBERTA, JANUARY - JUNE, 1982

The Research and Planning Branch of Computer and Research Services produces quarterly "Crime Trends in Alberta" reports. While crime trends for the first six months of 1982 have not yet been officially reported, a brief overview of the trends follows.

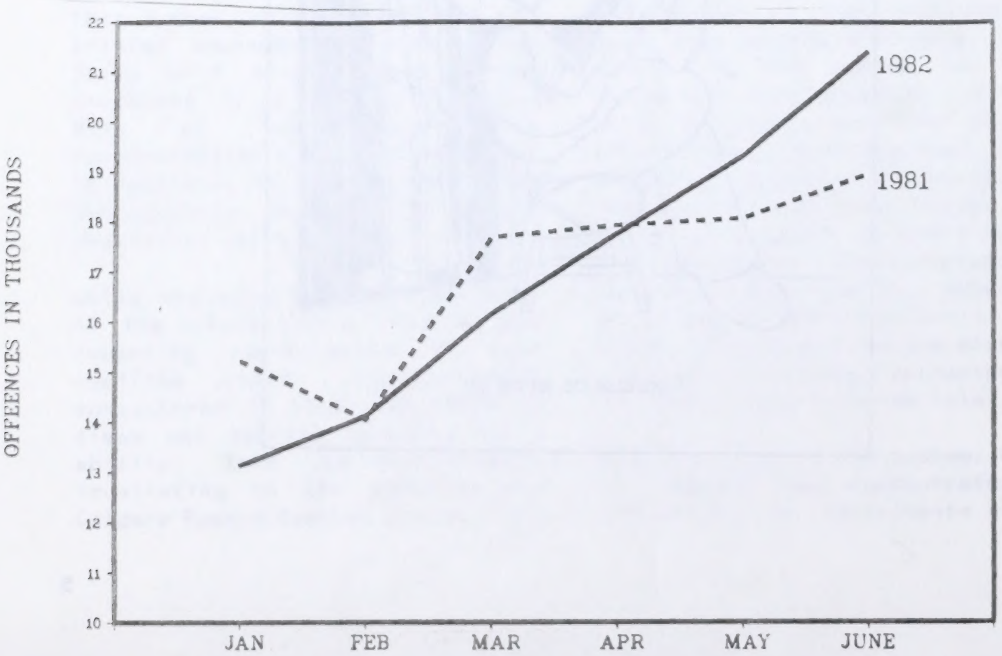
The incidence of Criminal Code Crime (all Criminal Code of Canada offences excluding traffic offences) differed only marginally between the first six months of 1982 and the same period of 1981. There were 101,958 Criminal Code offences from January to June of 1981 and 101,939 such offences during the same period of 1982. The graph below compares monthly variation in Criminal Code crime for 1981 and 1982. A total of 23,646 persons were charged with Criminal Code offences in the first half of 1982.

There were 9,076 violent crimes between January and June of 1982. This is a 10.1% increase over the incidence of violent crime during the first half of 1981. Assaults constituted 77.9% of all violent offences between January and June, 1982. All types of violent crime increased between the first half of 1981 and 1982 with homicide being the only exception--there were 13.3% fewer homicides from January to June in 1982 as compared to the same period in 1981.

Property Crime is the largest contributor to Total Criminal Code Crime. During the first six months of 1982 there were 69,289 property offences; this comprised 68.0% of Total Criminal Code Crime. Overall, property crime increased only 1.7% when comparing the first half of 1981 to the first half of 1982. This increase in property crime was primarily due to increases in theft exceeding $200 (up 15.0%) and frauds (up 10.0%). All other types of property crime decreased during the first six months of 1982.

Other Criminal Code Crime decreased by 7.8% when the first half of 1982 is compared to the first half of 1981.

TOTAL CRIMINAL CODE CRIME
JANUARY TO JUNE, 1981 and 1982



ALL ABOUT PIMS

The Personnel Inventory and Management System (PIMS) is a computerized system which will introduce automation to personnel administration of the Alberta Solicitor General. The system will interface with the Personnel Administration Office (PAO) and Treasury Department systems.

Historically, the personnel administration in the Alberta Solicitor General has been a manual process. In 1980, the Department divided personnel administration between the Edmonton and Calgary personnel offices to provide more localized service. The regional offices and institutions found it necessary to maintain their own personnel files because of untimely responses from the main personnel system.

In December 1981 the Department hired Quasar Systems to find a solution to the problems caused by the existing personnel system--the solution was PIMS. PIMS will provide easy access to comprehensive personnel and position files in the Solicitor General head office. These files will be accessible to the regional personnel offices and ultimately to the institutions of the Alberta Solicitor General.

PIMS will integrate all personnel functions including recruitment and selection, personnel file maintenance, position file maintenance, staff development, employee relations, and occupational health and safety. It will interface with Treasury and PAO systems by transferring data to and from these systems. PIMS does not address the time reporting, collection and payroll processing of Solicitor General personnel.

The SDM/70 methodology controls the development of PIMS. The System Requirements Definition (SRD) was produced and approved in March 1982. The System Design Alternatives (SDA) was published and approved in July 1982. The system is currently in the External Specifications (SES) phase. Technically the system will be implemented using ADABAS as a file handler. All main system files will reside in the central computer and will be accessed via Mohawk Data Entry Stations. Some functions of the system will be resident in the Mohawk minis to incorporate word and data processing.

Programs will be written in COBOL and MOBOL and will take advantage of the network and special software tables which are currently being developed for the MVD system "MOVES". A prototype recruitment and selection sub-system is currently in the programming stage and will be implemented in early 1983. This sub-system will eventually be converted to the ADABAS Data Base Management System. The development of the Personnel and Position Files sub-systems is also scheduled for early 1983.

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Cindy Raftis, Room 402,
Melton Bldg., 10310-Jasper Ave.,
Edmonton, Alberta T5J 1W4.

CORRECTIONS PROJECTS

The Corrections New Project unit is continuing to upgrade the existing COMIS production system. Upgrades were made in November to improve data security and to remove the need to re-enter data lost during computer hardware problems. New edits are being implemented in the Charge screen to improve the integrity of data capture and to incorporate the new docket numbering system. A complete review is taking place of the contents, use of, and update procedures for the tables in COMIS.

The Corrections New Project unit has completed initial testing of the Mini-COMIS system. User-defined upgrades and problems identified during user testing are now being rectified. The second phase of user testing commenced in December.

The Inmate Trust Account System is in the system testing stage. Demonstrations of the on-line aspects of the system have been given to Regional Services and the ERC accounting staff. Comprehensive user tesing by ERC staff is scheduled for January 1983.

A COMIS Working Committee meets bi-weekly to review the development of the COMIS system and to discuss operational problems and their solutions. Regional Services of the Correctional Services Division and Computer and Research Services contribute members to this committee.

The newly created Corrections Research File provides Research and Planning with more flexibility in handling information requests, performing complex statistical analyses on COMIS data and in producing graphics using COMIS data.

The Research and Planning Branch is preparing the second set of quarterly reports for Staff Training and Development which currently contains training information on most institutional personnel.

LAW ENFORCEMENT PROJECTS

Law Enforcement projects centre around a newly developed law enforcement research file. This file contains Uniform Crime Reporting (UCR) data on all policing jurisdictions in the province. Access to this data via the research file makes possible the preparation of the report "Crime Trends in Alberta". It has also made possible the development of a statistical model for forecasting provincial crime trends.

Other current Law Enforcement projects include a report examining current and potential management uses of crime statistics and statistical techniques, the development of a Crime Prevention Program Inventory summarizing information on all crime prevention programs in Alberta, the production of the first set of Alberta Highway Patrol Quarterly Statistical Reports, and participation in the establishment of a victim based statistical system for the Edmonton City Police Department.

MOTOR VEHICLES PROJECTS

Representatives of the MOVES project team recently outlined the development schedule and operation of the new motor vehicle system at the Motor Vehicle Division management meeting in Lethbridge. The project is currently in the detailed design and programming stage. Plans are being finalized for MVD office renovations and equipment installation. Implementation of the system is expected in the first half of 1984.

A project designed to give online access to the Motor Vehicle Driver Demerit System is currently being programmed, with completion expected early in 1983. The system will allow distributed access to driver abstracts.

The Young Drivers Instructional Program pilot project has been completed and reviewed by MVD senior management. The project will be continued and a new contract is being prepared by Alberta Supply and Services. File maintenance and minor enhancements continue to be performed on the current motor vehicles production system.

As an ongoing project, Research and Planning produce a monthly management report containing statistics on the number of cash transactions processed in the 11 Motor Vehicle offices. In addition, the recently concluded Standards of Performance Study reported on the workload at Motor Vehicle offices. Currently research staff are evaluating the Driver Certification Program to determine whether drivers tested by driving schools differ in their driving records from those tested by MVD examiners. The Research and Planning Branch is also conducting a review of driver testing in Alberta.

DEPARTMENTAL SUPPORT PROJECTS

CRSD is conducting a number of departmental support projects. Divisional staff are improving interfaces between departmental systems and the national police network of the Canadian Police Information Centre (CPIC). The division is also participating in the ongoing development of a long range electronic data processing plan for the department. Related to this is the joint study with Alberta Supply and Services to examine computer usage. The objective of this study is to determine the capacity required of a computer dedicated to the department.

In the area of administration, staff are testing a new budget control and financial management package. Discussions with Administrative Services concerning this package are planned for the immediate future. Also relating to administrative matters, the Personnel Inventory Management System (PIMS) has progressed nicely and the Department recently presented an overview of PIMS to the government's Departmental Personnel Council.

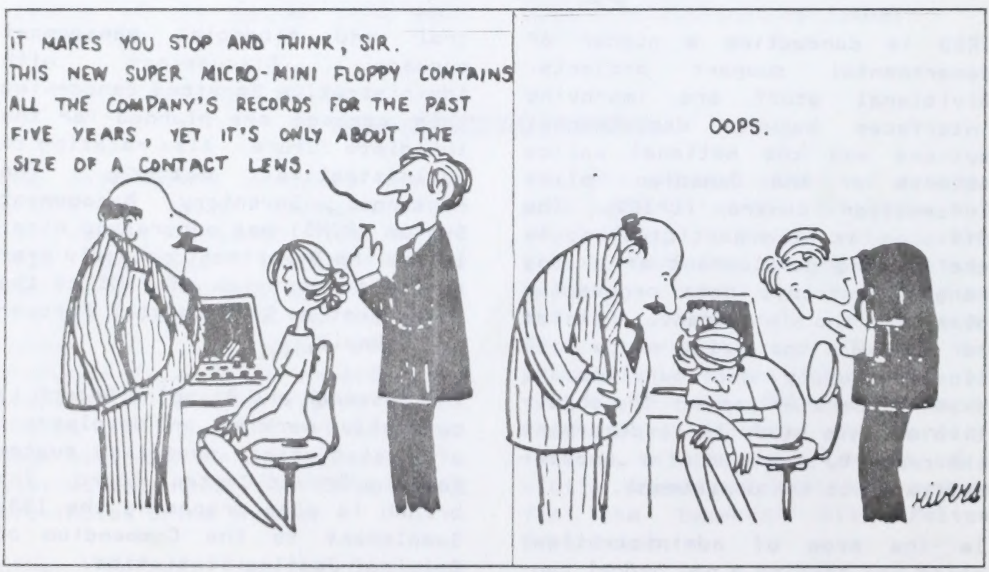
The Research and Planning Branch is currently working on development of a statistical reporting system for the Driver Control Board. The branch is also preparing the 1982 Supplement to the Compendium of Criminal Justice Statistics.

TEST YOURSELF!

Each question below contains the initials of words that will make it complete. Find the missing words! Answers will be published in the next newsletter.

EXAMPLE: 16 = O. in a P. Ounces in a Pound

26 = L. of the A.
7 = W. of the A.W.
1001 = A.N.
12 = S. of the Z.
54 = C. in a D. (with the J.)
9 = P. in the S.S.
88 = P.K.
32 = D.F. at which W.F.
18 = H. on a G.C.
90 = D. in a R.A.
200 = D. for a P.G. in M.
8 = S. on a S.S.
3 = B.M. (S.H.T.R.)
4 = Q. in a G.
24 = H. in a D.
1 = W. on a U.
5 = D. in a Z.C.
57 = H.V.
1000 = W. that a P. is W.
29 = D. in a F. in a L.Y.
64 = S. on a C.
40 = D. and N. of the G.F.



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VOL. 1, NO. 2 MARCH, 1983

THE ORGANIZATION OF THE CRSD

The mandate of the Computer and Research Services Division is to provide systems and research resources to other divisions within the Alberta Solicitor General. The division consists of three branches; Operations Systems Development, Systems Support and Research and Planning.

The **Operations Systems Development Branch** provides systems development capability for the Motor Vehicles, Corrections and Law Enforcement Divisions. One project team within the branch is assigned to work with each of the divisions. Currently, the branch's efforts are concentrated on two major projects; the design and construction of the Motor Vehicle System (MOVES), and the upgrading of the Correctional Management Information System (COMIS) to run part of the operation on Data General mini-computers.

The **Systems Support Branch** comprises three units; Administrative Support, Support Systems Development, and Production Systems/Technical Support. Administrative Support provides services for Electronic Data Processing (EDP) budgets and annual operational plans, and handles all financial and contractual arrangements for equipment installation and general administrative support. The Support Systems Development Unit handles systems development for the Personnel and Finance and Administration Divisions. Production Systems/Technical Support is responsible for the maintenance and enhancement of implemented systems as well as for providing technical

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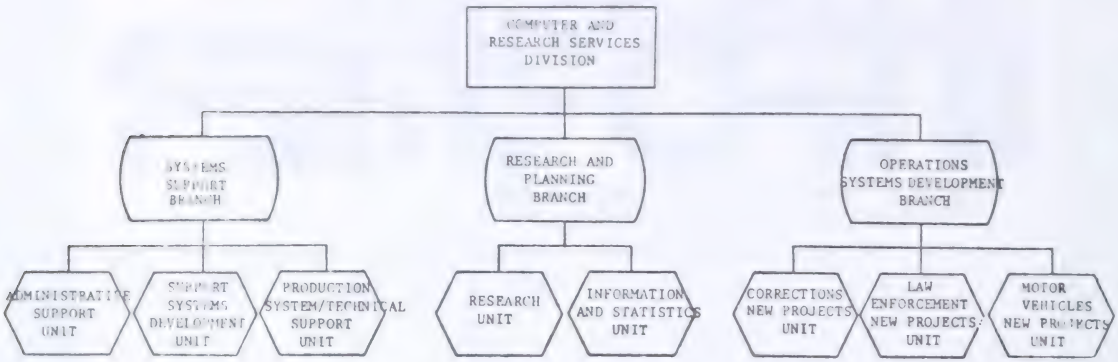
support to the remainder of the division.

The **Research and Planning Branch** was recently reorganized into two units. The Research Unit conducts policy and evaluation research while the Information and Statistics Unit provides operational and management information, usually in the form of monthly and quarterly statistical reports. Personnel from both units also serve on various inter-departmental and inter-governmental committees.



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THE COMIS PHONETIC NAME SEARCH ROUTINE

A major element of the inmate tracking function of the Correctional Management Information System (COMIS) is the accurate identification of a client entering an institution. This identification is necessary for many reasons. Specifically, one key objective of COMIS is to accumulate the complete case history of an inmate under an assigned COMIS file number. This number, once assigned to an inmate, should always be referenced for any return visits by that same inmate. With a recidivism rate of over 35% since the implementation of COMIS, it can readily be seen why the admission staff in the correctional institutions (particularly the remand centres) need a technique available to identify whether a client is a returnee. Other reasons for having an accurate name search technique relate to establishing the status of a returnee. For example, circumstances could be such that the client was an escapee or unlawfully at large. By reviewing the past history this information will be highlighted to the institutional staff and the appropriate action initiated.

In the admission procedure, the key requirement is to obtain the previously allocated COMIS number by using the inmate name or assumed name (alias). The basic name search technique currently being used matches alphabetically, by the first four letters in the name, all recorded names for previously admitted inmates. The set of selected inmates is displayed for the admissions staff in order for them to determine whether the new client had been previously admitted. This technique has a number of deficiencies which are usually related to errors in the spelling of names.

A major upgrade to the name search technique is obtained by using a phonetic name search technique. This technique places the emphasis on the sound of a name as the selection criteria. Each name is broken down by its sounds and given a particular numeric value as detailed below.

The phonetic name search used in Mini-COMIS assigns a number value or blank to each letter of the alphabet as in the following table (≠ denotes a blank). Letters which sound similar are given equal code values in this table.

A-≠	H-≠	O-≠	V-1
B-1	I-≠	P-1	W-≠
C-2	J-2	Q-2	X-2
D-3	K-2	R-6	Y-≠
E-≠	L-4	S-2	Z-2
F-1	M-5	T-3	
G-2	N-5	U-≠	

All letters in the name (except the first letter) are converted to their numeric values. These codes are edited to avoid overstressing a sound according to the following rules:

- Any value after the first coded value will be blanked until it is not equal to the first code. For example:

5552	becomes	5≠≠2
2322	remains	2322
5≠51	remains	5≠51

- If two identical codes are next to each other the first code is blanked.

The resulting phonetic key consists of the first letter of the name followed by the first three non-blank phonetic codes. If the trailing characters of the pho-

netic key are blank, they are replaced by zeros. The process is best illustrated by two examples:

WHITMORE		WHITE
W≠≠35≠6≠	phonetic code replacement	W≠≠3≠
W≠≠35≠6≠	remove overstressing	W≠≠3≠
W356	4-character phonetic key	W300

The advantages of the phonetic key over the equivalent four character alphabetic search are clear. Using the four character alphabetic key with the name **WHITE** would create hits on such names as **WHITE**, **WHITMORE**, **WHITAKER**, **WHITFIELD**, **WHITWORTH**, and **WHITTAKER**; most of which do not sound similar to **WHITE** at all. In comparison, by using the phonetic name search technique, the names **WHITE**, **WHYTE**, **WATT**, **WATT**, **WYATT**, and **WADD** (all of which sound alike) will be found.

The phonetic name search technique results in a more relevant set of "hits" on the name search enquiry. Further parameters can, of course, be used to further reduce the number of hits which in turn will make the selection process much simpler. These parameters include date of birth, sex, height range, weight range, etc.

CRIME PREVENTION IN ALBERTA

As crimes against people and property have risen in recent years, an increasing awareness has developed that a before-the-fact approach must be instituted if crime is to be adequately controlled. Two main reasons have acted as the impetus for this heightened movement towards more crime prevention programs. First, crime prevention is economical. It is far more practical, particularly in view of budget constraints, to utilize concerned citizens in an organized manner, such as in a Neighbourhood Watch program, to help prevent crime than to increase the number of police officers patrolling a given community.

The second reason involves the strong belief that the reduction of opportunities for individuals to exhibit criminal behaviour will result in a significant decrease in the amount of crime committed. This is considered to be the most important aspect of crime prevention as there is sufficient evidence to support the view that the majority of property crime is committed by semiskilled or unskilled amateurs and centers around opportunities created by the victims themselves. Crimes of opportunity are the easiest crimes to prevent. The realization that these crimes of opportunity are relatively easy to prevent led to crime prevention being accepted as a new and equally important part of crime control.

To this end, many communities started to develop programs to combat their local crime problems. Once these programs were in place, other communities, upon hearing positive results, would borrow the concept and adapt it to their local needs. Since this information exchange largely depended upon a particular group's contacts, it became apparent that there was a

need to develop a system whereby comprehensive information on crime prevention could be obtained in a more systematic manner.

As part of its mandate under the Police Act of 1973, the Law Enforcement Division of the Alberta Solicitor General is responsible for the promotion of crime prevention in Alberta. In 1976, a Crime Prevention Committee was established to co-ordinate crime prevention programs and to facilitate the implementation of innovative crime prevention programs. This committee also has the resources to serve the information and research needs of the various crime prevention units within its jurisdiction.

In view of the lack of a systematic information source on all the crime prevention programs in Alberta, the Law Enforcement Division mandated a study to be done by the Research and Planning Unit of Computer and Research Services Division. The initial project involved preparing an inventory of all crime prevention programs in Alberta at present. Specifically, the inventory includes:

- a synopsis of each program and its parameters;
- the basic philosophy behind the program;
- an outline of each program's goals;
- a description of the program's administration, sponsors, and sources of funding; and
- a discussion of any evaluations that have been done on the program.

The inventory is divided into four major sections which correspond to the various types of crime prevention programs operating in Alberta. The first section consists of Personal Crime Prevention programs or measures individuals can take to protect themselves, their families, and their residences from possible victimization. Also covered are crime prevention programs designed for specific groups. That is, particular programs for women and the elderly who, objectively speaking may not be victimized as frequently as other groups, but, when victimized, suffer much more devastating consequences.

The second section discusses the use of Community-Based Crime Prevention programs in Alberta. Along with covering the standard programs in use, such as Block Parent, this section looks at the use of target-hardening to reduce crime in various areas of a community. As an adjunct to these community based programs, media programs which have crime prevention as their major goal are also discussed.

The third part of the inventory concerns itself with Business Crime Prevention programs. The use of security surveys and various business target-hardening procedures is also covered.

The final section looks at juvenile delinquency programs in the province. It was decided that programs for juveniles should be examined separately, particularly in view of the recent legislative changes concerning young offenders and the fact that a significant number of juveniles are involved in crimes committed in Alberta.

This inventory can be used as a basis for further research. Areas of crime prevention that are not be addressed can be noted by their absence and efforts can be directed towards filling that gap. In addition, small pilot projects can be explored or developed further in areas where people perceive there is a need.

Crime prevention can be defined as any organized activity that has as its goal the reduction or prevention of crime. Under this definition, all activities from diversion programs within the criminal justice system to legislation formulated to protect the interests of citizens, such as laws specifying the types of locks developers must use in housing developments, can be considered crime prevention programs. The intention of the inventory is to focus on primary intervention programs; that is, the programs considered in the everyday sense as being crime prevention programs.

THE YOUNG DRIVER INSTRUCTIONAL PROGRAM

In 1982, the Alberta Solicitor General studied the possible application of computer assisted instruction to driver education. Dr. Walter Hoffman, who has since retired from the department, approached an educational software group, Alphatel Systems Ltd. to develop the software for such a system. Alphatel Systems responded by proposing to develop an instructional system with contents similar to the Driver Handbook published by the department.

The department, recognizing that the resulting system could be used in Alberta's school system, initiated a steering committee which included a member from Alberta Education. The Department of Education supplied two micro-computers for developing the system. Subsequently, a contract was signed with Alphatel and a pilot project was begun.

By late 1982 the pilot project was completed, tested, and evaluated. The evaluation indicated that computer assisted driver instruction was both feasible and worth pursuing. Consequently, the department entered into a second contract with Alphatel to complete the project.

After Alphatel Systems completed the necessary software, the Alberta Solicitor General offered it to all Alberta school boards. In addition, the department purchased equipment to demonstrate the system and for software maintenance. The complete system has been tested and evaluated in several school districts.

The application for the computer assisted driver instruction is written in PASCAL. The equipment required to operate the package includes an APPLE II (or equivalent) with 64K of Random Access Memory, one disk drive and a Telidon decoder/monitor to provide interactive graphics.

The department recognizes it must take an active role in meeting the needs of young drivers and their training. The **Young Driver Instructional Program** is an important step towards meeting these responsibilities.

DDP AND THE MVD

A key concept behind the new Motor Vehicles System is Distributed Data Processing (DDP). DDP is more than adding new equipment to old offices. Organizations which adopt DDP must be prepared to adapt to the demands of the new technology. This article examines some of the effects DDP wil have on the Motor Vehicle Division (MVD) of the Alberta Solicitor General.

Currently, a central computer system stores all vehicle and operator records for the entire province. Service reminders are produced from this system and mailed to the clients. The eleven MVD field offices can access the central system only for enquiry purposes; the 190 private agencies supplying motor vehicle services have no access at all. Consequently, the renewals and other transactions conducted by the field offices, as well as those mailed in, must be recorded on paper forms which are sent to a central MVD facility. There, the documents are checked and the forms are then sent for keypunching. After keying, the data is edited and errors are corrected by central MVD staff. This centralized processing necessitates a large headquarters staff.

The present system creates a sharp division of responsibility. The operation of the field offices is geared toward the speedy handling of over the counter requests for service with no time being spent on data entry and little time being spent on correcting or verifying historical information or detecting contradictory records. In contrast to this, the large central staff is primarily concerned with the quality control and maintenance of data received from the field offices.

Distributed data processing will change this division of labour. It will cause new tasks to arise and old responsibilites to change hands. Field office staff will be expected to acquire certain data processing skills. They will be expected to do minor diagnostic checks, load the operating system, create local back-up files, recover the system after certain types of failure and perform the routine housekeeping tasks required to maintain their mini-computer. In addition, because of possible disruptions in communication between the central computer and the mini-computers located in each office the field offices must be prepared to decide when to switch to offline (or back-up) mode and collect the data on the mini-computer files and when to return to real-time communication with the central computer. These decisions will regulate the number of temporary documents which are issued while in offline mode and the number of permanent replacement documents which the central office must produce.

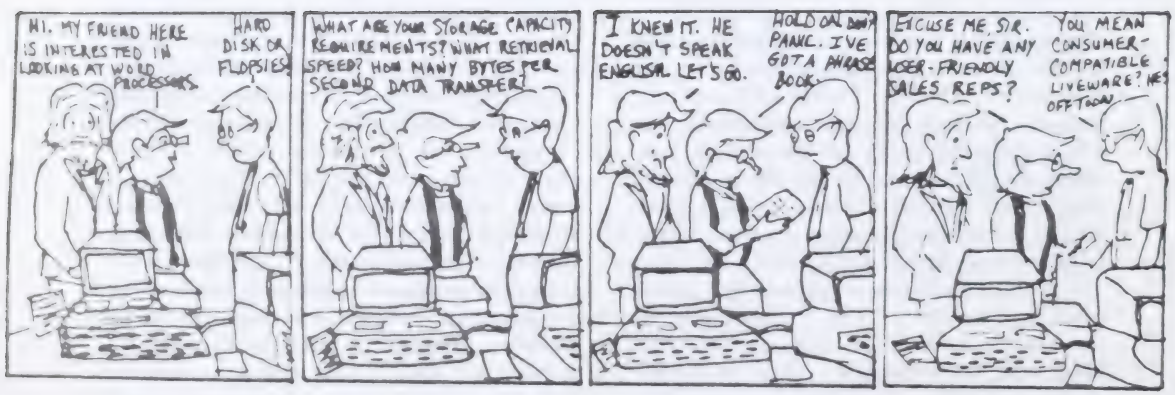
DDP will have its greatest effect on data entry and correction. Much of this work will be shifted from the central to the field offices. For example, when a customer asks to register a new vehicle the field office staff will enter the necessary information directly into the central database. rather than recording it on paper forms. This data entry process will take place while the customer is present so that questionable data can be corrected immediately with the customer's help. When the data is correct it will be updated on the central system. Should a problem arise, an audit (exception) report will be sent back to the field

office for correction. Thus much of the responsibility for data entry and correction is shifted to the field office.

The entry and correction of data may slow some services in the field offices. However, DDP will speed the overall processing of operator and vehicle information by eliminating the present time-consuming data entry and correction procedures.

The new equipment and system will make virtually all MVD functions available in the field offices. The functions allowed in the various types of offices become strictly a policy decision, based on efficiency, security, and other factors. The result will be a dramatic expansion of functions in the field offices, with a concomitant reduction in exclusively "head office functions".

The subject of my article for the next issue of **THE INFORMER** will be an explanation of how the department is preparing for the aforementioned changes. Topics to be covered in this article include: consideration of the new regional organizational structure, staged implementation of new program initiatives (such as staggered registration) prior to implementation of the new system, automated mail-in renewal handling, training in data processing concepts, and a plan for staged growth of our network.



AN OVERVIEW OF CRSD PROJECTS

CORRECTIONS PROJECTS

The Corrections New Projects Unit is continuing enhancements to the Correctional Management Information System (COMIS). One major task involves revising the existing system to reflect changes in the Criminal Code and provincial statutes. This requires enhancements to the table of current offences as well as inmate charge records. A conversion routine has already been established for this purpose.

Additional improvements to the production system include a redesign of the charge entry screen to incorporate a more user-friendly input layout and more complete editing features.

Major changes to the Name Search routines on the production system have just begun. A phonetic name search will be incorporated to improve name and alias responses to the searching technique.

The Data General mini-computer version of COMIS has been completed to the original specifications. These specifications include a distributed processing system on the Data General mini which allows stand-alone processing as well as access through the mini to the IBM mainframe database. Data transfers between the two machines will take place on a once-a-day batch interface basis.

The Inmate Trust Account/Incentive Pay system developed on the Data General minis for the Remand Centres has passed user acceptance testing. Implementation in the Edmonton Remand Centre is scheduled for early April upon completion of the necessary training, conversion and procedural modifications. Work has started on the design of an equivalent application for the sentence serving institutions to run on the IBM mainframe.

Research and Planning is presently working on projecting inmate populations. This project will provide background information on projection techniques and will evaluate various techniques which have been developed to project inmate populations.

MOTOR VEHICLES PROJECTS

In February, the Motor Vehicle System project team presented the application development strategy, the central component function, and the design of the CLIENT subsystem to forty Motor Vehicle and Finance and Administrative Services staff from the department. Central component programming is nearing completion and programming is starting on the CLIENT subsystem (the first application subsystem), incorporating suggestions from the review committee.

Four systems co-ordinators from the Motor Vehicle Division have joined the Motor Vehicle project team. The co-ordinators will work full-time on development of the system and will gain experience in training and in managing the operation of the system.

Renewal notices for the annual vehicle registration have been mailed out. A standard registration fee of thirty dollars is being charged for all passenger vehicles this year. Most of the registration renewals mailed back will be read by a new computer system designed to read and record the information using an Optical Character Reader (OCR). This new system will dramatically reduce the volume of key-punching usually required during renewal time, speed up processing of the renewals and reduce errors.

The online Driver Demerit system is in the final testing stage. Equipment will be installed at the test sites this month.

The Research and Planning Branch is evaluating the Driver Certification program. This project will determine whether drivers certified through the Driver Certification program are more or less likely to encounter driving problems than drivers tested by MVD driver examiners.

A review of Driver Licencing is also being conducted. This study will provide background information on the driver licencing procedures of other jurisdictions. The initial phase of this project will identify programs which appear to have a beneficial effect on traffic safety. The second phase will collect detailed information on these programs.

LAW ENFORCEMENT PROJECTS

The Research and Planning Branch has prepared a statistical report summarizing alcohol-related driving offence data for the past two years. Data for this report include charge data retrieved from POLIS, Check Stop statistics, conviction and suspension statistics from the MVD monthly production reports, and sentencing information obtained from the corrections research file and the COMIS database. This Alcohol-Related Driving Offence statistical report is to be produced on a regular basis.

An initial draft of the Crime Prevention Program Inventory was prepared by the Research and Planning Branch. The inventory covers all crime prevention programs in Alberta and contains program-specific information such as: the program's target population, goals, delivery strategy, funding sources and manpower. The report has been returned to the field to verify its content before final publication.

The up-coming Alberta Highway Patrol quarterly statistical report will contain additional information on the amount of time spent by the Alberta Highway Patrol on the various roadways and highways in the province. In addition to the fourth quarter statistical report, a fiscal year-end report is being prepared.

A 1982 year-end Crime Trends in Alberta report is being produced and will be available shortly. The statistics for this report are obtained from the law enforcement research file which uses Uniform Crime Reporting data.

DEPARTMENTAL SUPPORT PROJECTS

PIMS, the Personnel Inventory and Management System, now has the Recruitment subsystem in production. The Personnel, Position, and Staff Development subsystems are in various stages of System Internal Specifications and Program Development. The second set of Staff Training and Development quarterly statistical reports were produced in January; production of these reports has been terminated until the Staff Development subsystem is complete.

Discussion of Information Services Division mainframe utilization by the Alberta Solicitor General continues. An evaluation of computer utilization by day of week, shift, and month should be complete in April and will provide information pertaining to tape, disk, printing, and CPU usage.

The interface between CPIC and COMIS is in the construction phase while enhancements are being made to the existing MVD/CPIC interface.

The writing of the Administrative Procedure Manuals by the Systems Support Branch is continuing. Completion of the Payroll Manual is scheduled for mid-summer.

The departmental EDP strategic planning process has started again which will result in an EDP plan to support our annual EDP budget submission. The department will also project their EDP requirements for 1984-85 and onward.

HAWAII OR MEXICO THIS YEAR?

Amazing how one little letter can make a world of difference! A recently caught typo illustrates the point. A secretary in our Division had typed:

"Once in gaol, inmates have access to various programs, including ... vacation and treatment options"

instead of

"vocation and treatment options".

TEST YOURSELF - ANAGRAMS!

Below is a list of words which, when the letters are shifted around, form another familiar word. Each letter must be used once, but only once.
Anagram solutions will be published in the next issue of THE INFORMER.

Spectrum	Grounded
Ruthless	Scurries
Consigned	Alignment
Alarming	Tangible
Incorporate	Ancestorial
Collapsed	Intoxicate

ANSWERS TO LAST ISSUE'S TEST

16 = O. in a P.	Ounces in a Pound
26 = L. of the A.	Letters of the Alphabet
7 = W. of the A.W.	Wonders of the Ancient World
1001 = A.N.	Arabian Nights
12 = S. of the Z.	Signs of the Zodiac
54 = C. in a D. (with the J.)	Cards in a Deck with the Jokers
9 = P. in the S.S.	Planets in the Solar System
88 = P.K.	Piano Keys
32 = D.F. at which W.F.	Degrees Farenheit at which Water Freezes
18 = H. on a G.C.	Holes on a Golf Course
90 = D. in a R.A.	Degrees in a Right Angle
200 = D. for a P.G. in M.	Dollars for a Pass Go in Monopoly
8 = S. or a S.S.	Sides on a Stop Sign
3 = B.M. (S.H.T.R.)	Blind Mice (See How They Run)
4 = Q. in a G.	Quarts in a Gallon
24 = H. in a D.	Hours in a Day
1 = W. on a U.	Wheels on a Unicycle
5 = D. in a Z.C.	Digits in a Zip Code
57 = H.V.	Heinz Varieties
1000 = W. that a P. is W.	Words that a Picture is Worth
29 = D. in a F. in a L.Y.	Days in a February in a Leap Year
64 = S. on a C.	Squares on a Checker Board
40 = D. and N. of the G.F.	Days and Nights of the Great Flood

THE INFORMER

A Publication of Computer and Research Services

4th Floor, Melton Building, 10310 - Jasper Avenue, Edmonton T5J 1W4

VOL. 1, NO. 3 MAY, 1983

THE YOUNG OFFENDERS ACT

Research and Planning Branch
Computer and Research Services Division

On May 17, 1982 the House of Commons passed the Young Offenders Act. This legislation replaces the Juvenile Delinquents Act and introduces new procedures for handling young people charged with an offence.

Central to the philosophy of the Young Offenders Act is the idea that the young person is both an offender and a young person in need of guidance. This implies that the young person should be expected to bear the consequences of his actions while still not being treated as an adult by the judicial system. Several aspects of this act exemplify this orientation.

The act provides alternatives to bringing the young person to trial. Rather than stand trial, the Crown may recommend that the young person be placed in special programs. The successful completion of such program results in the dismissal of the charges against the young offender.

In cases where the young person is brought to trial the act limits the length of sentence which can be imposed. The normal maximum sentence is two years in custody. However, a young person may be held for a period of up to three years if he is convicted of an offence which has,

Alberta
SOLICITOR GENERAL

under the Criminal Code, a maximum sentence of life imprisonment. These provisions are included because the Young Offenders Act recognizes that although young persons should be held accountable, they should not necessarily be penalized like an adult. It should also be noted that in addition to incarceration, the Young Offenders Act permits a large number of non-custodial sentences to be administered.

The Young Offenders Act also provides for the review of sentences. While an automatic review is required after a young person has been in custody for one year, the act also provides for reviews under various other conditions. These reviews further reflect the legislation's position that young people, though they are to be held accountable, should also be given special consideration.

One additional major departure of the Young Offenders Act from both the Criminal Code and the Juvenile Delinquents Act lies in the provisions for the destruction of records of young persons. Records of those persons acquitted of an offence must be destroyed. Records must also be destroyed where the Crown does not instigate proceedings against a young person for a specified period of time after charges have been dismissed for any reason other than an acquittal or after they have been stayed or withdrawn. Pardons granted under the Criminal Records Act also lead to records being destroyed.

(YOUNG OFFENDERS ACT continued...)

Contributions to THE INFORMER are welcome from our readers, particularly regarding announcements, articles, or events which affect a program area within the Alberta Solicitor General. Articles offered for publication or requests to be added to our distribution list should be directed to:

Editor
The Informer
Room 402
Melton Bldg., 10310-Jasper Ave.
Edmonton, Alberta T5J 1W4.

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In addition, if a young person maintains a conviction free record for a specified period of time after he has completed his sentence, his records will be destroyed. These rules were included so that a young person's future would not be prejudiced by a permanent record.

There are two exceptions to the rules governing the destruction of records. Police records and a copy of any photograph or fingerprint taken of a young person convicted of an indictable offence deposited in a central repository of records maintained by the RCMP will not be destroyed. These records are available to peace officers if the young person is suspected of having committed an offence. Also, records which are used for research or statistical purposes need not be destroyed.

With the proclamation of the Young Offenders Act in October of this year, a justice system will come into being with greater protection for young offenders than is provided by the Juvenile Delinquents Act and at the same time make the young offender more accountable for his actions.

THE INMATE TRUST ACCOUNT SYSTEM

Operations Systems Development Branch
Computer and Research Services Division

The Inmate Trust Account System (ITAS) has been designed as an operational enhancement for the Administrative activities in each of the Correctional Institutions under the control of the Alberta Solicitor General. The system, initially designed for implementation in the Edmonton Remand Centre, will greatly assist the accounting staff in the correctional institutions to maintain the necessary control, timeliness and accuracy of the inmates' accounts.

The Inmate Trust Account System has been designed to fit with the administrative procedures in the remand centres and institutions. The existing hand posting accounting machines will be replaced by video terminals and printers accessing the inmates trust account information stored on a computer data base.

The computer video terminals will be used by the accounting clerks to input the relevant accounting transactions including:

- Opening an account for an inmate with money in his possession following admission to the institution.
- Posting any cash received by the inmate through the mail or funds delivered by friends and relatives.
- Posting inmate expenditures for canteen sales.
- Posting other inmate expenditures, for example, when an inmate wishes to send money to relatives or friends.

- Posting of other miscellaneous expenditures or refunds that occur.

Information to be posted using the video terminals will be obtained from the necessary cash receipt or expenditure forms. A comprehensive verification and audit trail of the information captured will be maintained by the system.

Once verified, the accounting transactions input through the video terminals will immediately be posted to the inmate's account. This process will allow the accounting staff to maintain up-to-date balances of the inmates' funds.

In order to maintain an up-to-date balance for each inmate, the system will include the automation of the $1.00 a day incentive pay posting. This alone will greatly reduce the manual effort previously required to maintain the account balances.

An important design criteria incorporated in the new system is the identification of the inmate. The system will maintain an interface with the current Correctional Management Information system (COMIS) such that the inmate will be identified by the common COMIS number in both systems. This will allow for the integration of the accounting information with the other arrest and incarceration information. Also, the Trust Account System uses the admit, location and movement/release information captured in COMIS to verify the posting of accounting transactions and in the automatic generation of incentive pay.

A number of management control reports can be obtained from the system. These include inmate account balances and control totals, incentive pay summaries and specific inmate account information, as well as exception reports of negative balances on accounts and outstanding account balances for inmates that have been released. Specific account information can also be displayed directly on a video screen by the accounting management and staff. The accounting staff will request the preparation of the various hard copy reports through the video screens and the reports will be printed in the accounting area.

The system was implemented at the Edmonton Remand Centre at the beginning of May. Already, significant savings in time and effort are being experienced together with a major increase in the availability and timeliness of accounting information.

The Manager of Finance and Administration at the Edmonton Remand Centre, Dale Essensa, undertook a major effort by thoroughly user-testing all aspects of the system prior to implementation. This work, together with development of a comprehensive training program under the direction of Donna Dykes, COMIS coordinator, resulted in a smooth conversion and implementation.

Plans are now being drawn up to implement the system at the Calgary Remand Centre.

AN OVERVIEW OF MOTOR VEHICLE SPECIAL PROJECTS

Corporate Planning
Motor Vehicles Division

This article summarizes three major projects recently completed by the Motor Vehicles Division.

DRIVING WHILE SUSPENDED IN ALBERTA

Legally, drivers whose operators' licences are suspended may not drive any motor vehicle unless exempted by appropriate legislation. In spite of this, several research studies in North America, Europe and Australia have shown that a significant number of drivers continue to drive illegally during their suspension period.

A research study conducted in 1965 for the California Department of Motor Vehicles showed that 33% of suspended drivers had officially recorded instances of driving while under suspension. A related study of young drivers indicated that 32% of males under suspension had some driving convictions during their suspension period. In 1974 a study was undertaken in the State of Oregon on the effectiveness of driver licence suspension. It was concluded that 52% of respondents admitted driving one or more times during their period of suspension. Similar research in Australia indicated that about 36% of those surveyed admitted driving at some time during the suspension period.

Currently in Alberta, convictions are routinely recorded on the driving files of motorists when they are under suspension. Some of these motorists are not charged for driving while under suspension. It may be that the peace officer did not check the driver's driving record through C.P.I.C. at the time of the offence and simply wrote a violation ticket.

In order to address this issue, Corporate Planning has proposed the establishment of an automated alert system. The automated system is expected to alert MVD officials at the same time as the conviction entries are being made so that through arrangements with the police department, these motorists can be charged after the fact. Overwhelming support has been received from Law Enforcement, the Driver Control Board and the Alberta Attorney General.

DUPLICATE LICENCES AND SUSPENDED DRIVERS

There has been speculation that a large number of suspended drivers are obtaining duplicate licences during their period of suspension and/or prior to being suspended, hence the disincentive to attend the impaired drivers course for licence reinstatement. One way to address this issue is to find out how many suspended drivers actually applied for or obtained duplicates during their suspension period and/or prior (ie., a month is deemed appropriate) to the commencement of their suspension.

A sample of 8,281 motorists who applied for duplicate licences during June and July 1981 was examined. This figure amounts to 74% of duplicates issued by MVD for these two months. These duplicates were matched with the suspension

list, covering the period June 1981 to July 1982 to calculate the proportion of those who applied for duplicates while under suspension, and those who were subsequently suspended within one month of obtaining the duplicate.

Results indicated that only 11 suspended motorists (0.3%) applied for duplicates during their suspension period and another 55 (1.3%) applied for duplicates up to one month prior to being suspended. It is likely that some of the applicants in the latter category were genuine cases. Based on the 8,281 motorists issued with duplicates, there is no reason to believe that a significant number of suspended drivers are applying for duplicates during or up to one month preceeding their suspension period.

THE DRIVER CERTIFICATION PROGRAM

This Division empowers some driving schools to test candidates for the issue of an operator's licence. During the end of last year, the Research and Planning Branch of the Computer and Research Services Division was asked by the Assistant Deputy Minister of the Motor Vehicles Division to undertake research into this program. This research examined the following:

- Whether drivers tested by these driving schools differ in their subsequent driving records from those motorists tested by MVD driver examiners. The driving records of 20,731 young drivers licenced between January 1, 1982 and June 30, 1982 provided the required data.
- Whether there are any significant differences between these driving schools. Due to the large variations in statistics among the driving schools, comparison was limited to 13 of these schools.

The criteria for evaluating subsequent driving records were:

- Total number of driving convictions
- Total number of Criminal Code of Canada convictions
- Total number of non-Criminal Code convictions
- Total number of demerit points accumulated, and
- Length of time between the date the licence was created and the first conviction.

Results of the study indicated:

- There was no evidence that the driving records of drivers evaluated through the Driver Certification Program differed from the records of those tested by MVD driver examiners.
- The one difference which was revealed was the measurement of driving performance in terms of the number of Criminal Code offences. Measured against this criteria, drivers certified by private examiners were marginally better than those tested by Motor Vehicles Division driver examiners.
- Among the driving schools selected, drivers certified by one school appeared to have better driving records than those tested by the MVD. Only drivers certified through two driving schools acquired poorer driving records than those tested by MVD examiners.

As indicated in the report, "These differences, however, should be interpreted with caution since it could not be determined in this research whether these differences reflect actual deficiencies in the schools".

MOVES IMPLEMENTATION PLANNING

Computer and Research Services Division

The last two articles written about our new Motor Vehicle System (MOVES) provided a brief introduction to the system's architecture and the use of mini-computers to distribute some of the processing load to Motor Vehicle field offices throughout the province. The operational changes introduced by or accompanying the new system will be many. A great deal of time has been spent on implementation planning to provide for a smooth transition from the old system to the new one. This article summarizes the major changes and the strategies for coping with these changes which have already been identified.

The Motor Vehicle Division made a committment several years ago to improve customer service and data quality by bringing the services closer to the customer. This dispersal and expansion of service is being supported by the implementation of a regional management structure. Several months before the new system is ready for production, the Division will have the required manpower and procedures in place to support the operation.

The recruiting and training of the Operations Development Team (ODT) is another important aspect of organizational preparation for the new system. The ODT was recruited from Motor Vehicles Staff and is working full-time with the systems team in developing MOVES. The objective is to have one ODT member at each of the eleven MVD offices when the system is initially brought into production. These people will be experts in use of the system as a result of their having worked as part of the development team and also as a result of their work developing training and reference guides.

The ODT is also responsible for testing the system using the "model office" and for training all MVD field staff prior to the first live day of operation. After implementation, the ODT members will be pivotal members of the organization responsible for managing the operation of the system and defining system extensions or enhancements.

The "model office" mentioned above is a mock-up of a Motor Vehicle licencing location. The office contains typical service counters, terminals, printers, optical scanning wands, a controller, and Motor Vehicle information posters. This facility will be used extensively by the ODT for all their system testing and table/screen definition.

The model office was also used to design a functional office layout. Most of the eleven MVD offices had counters and floor plans considered unsuitable for extensive automation. New sectional counters were designed to give maximum flexibility to placement in different offices. The counters can be installed as a one-person section or combined for as many work stations as required. After achieving an acceptable design, a cardboard model was made and critiqued. A wooden prototype was then made for the model office. A large number of MVD staff critiqued the prototype before a final model was designed, built, and construction was tendered. Subsequently, all office reno-

vations and counter replacements were completed earlier this year.

While the office locations have been readied for the new system, an effort has also been made to familiarize field staff with the new distributed equipment. Last fall, the larger offices each received one mini-computer to use for word processing and hands-on familiarization. This spring all of the older non-intelligent equipment used for the current system is being replaced by the new mini-computers to allow all counter staff to become familiar with the equipment.

Additional benefits will be realized by installing the new equipment in advance of implementation of the new system. Our initial network is presently in place and all nodes are serviced, although not equipped to the extent production-use will demand. The equipment capability will allow us to simulate the system loading which will occur in production, and hence achieve a "live" test of the network performance we can expect. We are also planning to install a network monitoring system which will help us diagnose network problems and performance statistics. The end-result should be a well tested and tuned network prior to implementation of the new system with a concomitant reduction in implementation risk.

Our network plan initially calls for eleven heavily equipped locations with redistribution after initial production to forty locations. Subsequent expansions will be evaulated after stability is achieved at the previous level.

The presence of a network of mini-computers in field offices months prior to actual production will also facilitate training. After initial training sessions in the "model office", field-training and practice sessions can be conducted during the quieter business hours in the remote offices. These practice sessions should provide valuable feedback to the ODT and hence to the development team about system performance.

The new system will result in many changes for the Alberta MVD, but major changes in the way the MVD conducts their business also accompanies the original system study. Staggered vehicle registration, a totally re-written fee structure, licence plate re-issue, permanent fleet registration, life-time trailer plates, automated mail-in vehicle registration renewal and implementation of a process which will detect outstanding traffic tickets are major changes which are to be made. Planners initially looked at alternatives for a staged implementation. A decision was made to spend several man-months enhancing the old system to allow staggered registration, a new plate issue, and the new fee structure to take place prior to implementing the new system. These old system changes have already taken place. This fall vehicles in Alberta will have new plates with staggered renewal dates and Alberta drivers will be billed according to the new rates.

A detailed plan has been made for permanent fleet registration. As well, life-time trailer plates have been developed. These changes are expected to be implemented in the spring of 1984.

Data purification on the old computer files started in mid 1982. This major task has included identification and linking of vehicle/fleet records. The purification is expected to be completed in the fall of 1983, with the first "dummy" conversion runs scheduled for early 1984.

In January 1983 a mini-computer driven remittance processor was installed to automate the recording and cash balancing of registration renewals mailed to the Department. The implementation was successful and the MVD is now much better prepared to handle an increasing mail-in program more quickly, accurately, and with less staff.

The institution of a process which detects outstanding traffic tickets and results in a refusal of service for customers with traffic offences in default, will be available when the new system is implemented in the summer of 1984. The process is being closely co-ordinated with the Alberta Attorney General which assumes responsibility for administering the court process.

The entire implementation planning process is attempting to achieve an orderly, "least disruptive" implementation of major changes to the Alberta MVD. How successful we will be is yet to be established. The extent of implementation planning should reduce inevitable problems and lessen the impact of the changes.

THE BALLAD OF THE OPERATION DEVELOPMENT TEAM (O.D.T.)

Submitted by the O.D.T.

There are things being done in Edmonton
By the group called O.D.T.
By the time they're through, may God help you
And brother, may God help me.

They're making plans, imposing bans
And writing up their tables
They lay out screens, whatever that means
For all things there are labels.

The MVD will never see
How much these people do
And if they fail, then quake and quail
For the system they will screw.

If things don't work or there's a quirk
Within the system plan
If a table won't or a message don't
Blame O.D.T. my man.

While your job's secure, we're not so sure
About those of O.D.T.
If things go crunch, then they're the bunch
Whose jobs will just not be.

AN OVERVIEW OF CRSD PROJECTS

CORRECTIONS PROJECTS

The Inmate Trust Account/Incentive Pay system has been implemented on the Data General mini-computer at the Edmonton Remand Centre. An overview of this system is described elsewhere in THE INFORMER. The system represents the first step in the automation of the administrative functions in the correctional centres. System specifications for an equivalent system to be implemented on the IBM mainframe have been completed for user review.

The Data General mini-computer version of COMIS is now available for user training and final acceptance testing. These activities are scheduled for May and June.

Enhancements to the Correctional Management Information System (COMIS) during March and April centered on the definition and design of two interfaces. Firstly, the Attorney General Court Information System (CAPS) will receive, from COMIS, information on time to pay warrants which have been executed or satisfied by the accused serving the required time. This interface is scheduled for implementation early in June. Secondly, the Canadian Police Information System (CPIC) will be able to access COMIS information directly through an interface presently being developed. This will enable RCMP terminals in the Canada-wide CPIC system to retrieve and display information on COMIS clients to assist in their investigative process.

A major update of the Criminal Code and provincial statute charge information stored on COMIS was carried out in April. Work also continues on the planned upgrade to the name search routine and display feature.

Two presentations were given to Solicitor General management during March and April. A status review of the Corrections system activity was given to the Correctional Services Division Management Policy Planning Meeting. Also, a presentation of the Inmate Trust Account System was given to the Financial Division Management Meeting of Institutional Administrative Directors and Managers.

MOTOR VEHICLES PROJECTS

The last modules of MOVES' Central Component are nearing integration testing. These modules coordinate all communication and synchronization between the host and mini-computers.

The Client and Microfilm subsystems have passed user reviews and are well into development with some programs already coded and tested. The Finance, Inventory, and Vehicle Services subsystems are in the detailed design stage with program definitions expected to be ready to pass on to the programming teams as soon as testing of the Client and Microfilm subsystems is completed in July and August.

Renovations are complete in all MVD offices and the first mini-computers have been installed. They will be used for

online access to the current MVD systems and the new online demerit access program until MOVES is completed.

The design of the MOVES was presented at the Motor Vehicle Information Systems' conference in Indianapolis during April and also to a visiting hardware evaluation group from Singapore.

A study to determine the size of a dedicated processor needed for the Alberta Solicitor General is nearing completion with a "Request for Proposals" to determine a supplier expected in September. The study indicates a processor in the range of an IBM 3083. A "Request for Information" is also being prepared to gather data on network monitors which may be used for our network.

The final programming changes are being made to the current motor vehicle system which will allow the issue of new licence plates this October. Alberta motorists will then be placed on a staggered registration basis for the first time.

Each year, the Transportation Safety Branch supplies our Department with the name, date of birth and licence number of drivers involved in fatal accidents in Alberta over the course of the year. The driving records of all Alberta drivers are then pulled by the Motor Vehicles Division and previous conviction, suspension and accident information is tabulated. The report on "Drivers Involved in Fatal Accidents in Alberta During 1982" was recently completed.

The Research and Planning Branch has prepared a report comparing 1981/82 and 1982/83 operator licence conviction and suspension statistics. The source of data for this report was the year-end Motor Vehicle Division Monthly Production Report.

LAW ENFORCEMENT PROJECTS

The Research and Planning Branch is conducting a Policing Cost study which will gather data on the cost of police services in approximately sixty Alberta communities. The object is to provide police commissions with a means of assessing the cost of policing in their communities.

A data problem has slowed the production of the 1982 "Crime Trends in Alberta" summary report. This report will compare the incidence of Criminal Code crime during 1982 to that which occurred in 1981.

An offence which is unfounded is one which police, upon initial investigation conclude is genuine but upon subsequent investigation conclude is not. Differences in police procedures can lead to varying proportions of reported offences being labelled as unfounded. A study presently being conducted will review the differences in the proportion of unfounded offences which exist among police jurisdictions in Alberta.

If police have sufficient information to charge a person for an offence, regardless of whether they in fact do so, the offence is classified as cleared. The clearance rate is the percentage of offences which are cleared by police. Thus it is a measure of police effectiveness. A study of

clearance rates in Alberta is also being conducted by research staff.

The 1982/83 fiscal year-end Alberta Highway Patrol statistical report should be available by mid-July. This report will summarize enforcement and general activity by the Alberta Highway Patrol for the past year and will compare this activity to that of the previous year.

Computer and Research Services will be putting out a "Request for Information" regarding potential acquisition of in-car terminals for the Alberta Highway Patrol.

The Law Enforcement Division, with aid from the Computer and Reserch Services Division, is coordinating a feasibility study for an automated fingerprint identification system.

The "Crime Prevention Programs in Alberta" inventory is now complete. The information in this inventory is to be updated on a yearly basis.

DEPARTMENTAL SUPPORT PROJECTS

The Personnel subsystem of PIMS (the Personnel Inventory and Management System) is nearing implementation with the target date set for June 1. Final testing and database assignment is now being completed. The Position subsystem is in the initial detailed design phase and implementation is still scheduled for late July. The Staff Development subsystem will be implemented in early July.

Discussions are ongoing with the central Personnel Administration Office in regards to the Absent Time Reporting System. Equipment requirements are being considered in order that the Department will be ready for the September implementation schedule.

Work is now progressing to have our annual EDP operational plan completed to support the EDP budget submission. The long range EDP plan is being updated at this time.

Numerous amendments have been identified in the previously completed Supply Services and Accounts Payable Policy and Procedures manuals. Changes to the manuals are scheduled to be made during the summer.

Positive discussions are continuing with Public Works/Supply Services in respect to the assignment of processing power for the Department and associated network control.

A Training Subsidy project is being conducted by the Research and Planning Branch in conjunction with Human Resource Services of the Personnel Division. This project reviews the procedures by which training subsidies are granted to department staff.

WTHT VWLS!

Each group of consonants below represents a common word without its vowels. In fact, each set of consonants corresponds to several such words. Your goal is to find the longest one for each cluster. Add the vowels A, E, I, O, U, and Y (the letter Y always counts as a vowel in this game) wherever and as often as you like to form the longest possible words. In forming a word, the order of the consonants may not be changed, nor may other consonants be added.

Score 1 point per letter for each of your 15 answers. For example: Given the consonants GRL the answer GIRL would score 4 points.

PAR SCORE: 80
EXPERT'S SCORE: 110

Our list of words, with a total score of 125 points will appear in the next issue of THE INFORMER.

STRT	PRDC	PRN
VLT	PCS	BTS
TML	CHS	LLT
CHT	THNS	RFLD
RTR	MNNS	SPCS

LAST ISSUE'S ANAGRAM SOLUTIONS

Spectrum	- Crumpets	Grounded	- Underdog
Ruthless	- Hustlers	Scurries	- Cruisers
Consigned	- Seconding	Alignment	- Lamenting
Alarming	- Marginal	Tangible	- Bleating
Incorporate	- Procreation	Ancestorial	- Lacerations
Collapsed	- Scalloped	Intoxicate	- Excitation

THE INFORMER

A Publication of Computer and Research Services

4th Floor, Melton Building, 10310 - Jasper Avenue, Edmonton T5J 1W4

VOL. 1, NO. 4 July, 1983

CRIME IN 1982

Research and Planning Branch
Computer and Research Services Division

TOTAL CRIMINAL CODE CRIME - The total number of Criminal Code offences (all Criminal Code of Canada offences excluding traffic offences) was 221,441 in 1981. This figure increased 4.2% to 230,677 in 1982. The population of Alberta increased 3.6% during the same period. As a result, the number of Criminal Code offences per 100,000 population increased 0.5% in 1982.

VIOLENT OFFENCES increased more than any other class of Criminal Code offences in the province during 1982 (10.8%). Violent offences increased from 18,026 offences in 1981 to 19,970 in 1982. The increase in violent offences per 100,000 population was smaller (6.9%) because part of the increase in violent crime can be attributed to population growth.

Sexual offences increased by 13.1%. Most of the sexual offences were indecent assaults. There were 964 indecent assaults in 1981 and 1,129 indecent assaults in 1982, an increase of 17.1%.

Assault (not indecent) was the most common violent offence in Alberta. The number of assaults increased 10.7% from 14,212 offences in 1981 to 15,734 offences during 1982.

Alberta
SOLICITOR GENERAL

The number of robberies in Alberta increased from 2,030 offences in 1981 to 2,239 offences in 1982; an increase of 10.3%.

PROPERTY OFFENCES increased 5.3% between 1981 and 1982 in Alberta. Property offences per 100,000 population did not increase significantly during this period (1.6%). The number of property offences which occurred during 1981 was 147,922. The corresponding figure for 1982 was 155,790 offences.

Most types of property offences did not change significantly between 1981 and 1982. Break and enters increased 2.0%, theft under $200 increased 2.6%, possession of stolen property declined by 3.2%, and theft of motor vehicles decreased 4.7%. Fraud and theft over $200 were the only two property offences to increase significantly during this period.

The number of thefts over $200 increased 15.4% from 28,815 offences in 1981 to 33,258 offences in 1982. Most of the theft over $200 involved theft from motor vehicles. There were 14,414 such offences in 1981 and 16,454 offences in 1982, an increase of 14.2% for 1982.

Fraud increased 15.5% between 1981 and 1982. There were 12,354 frauds in 1981 and 14,268 in 1982. The most frequently occurring type of fraud was fraudulent cheques which increased from 7,743 offences in 1981 to 8,734 offences in 1982, an increase of 12.8%.

(CRIME IN 1982 continued ...)

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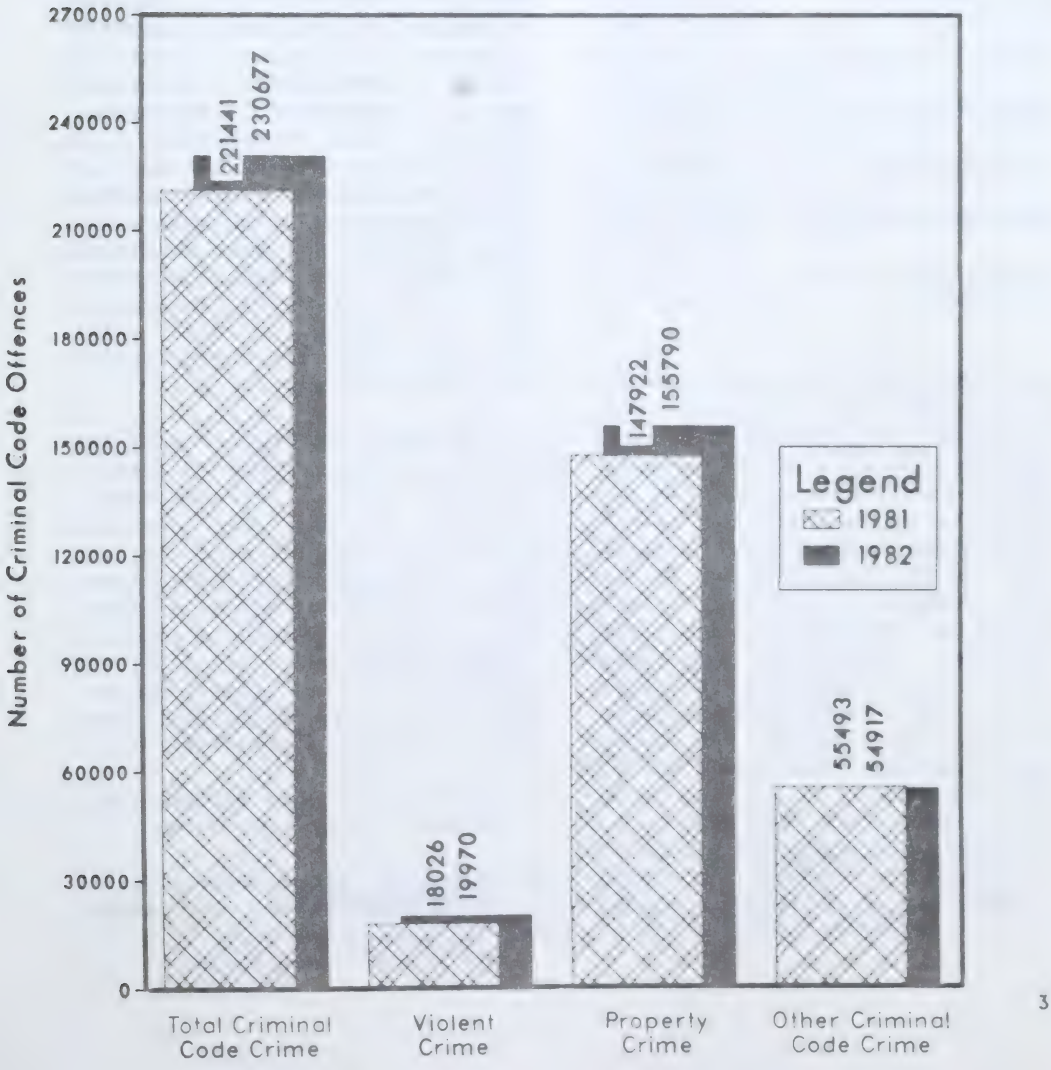
OTHER CRIMINAL CODE CRIME decreased from 55,493 offences in 1981 to 54,917 offences in 1982, a decline of 1.0%. Vandalism was the most frequently occuring Other Criminal Code offence comprising 52.4% of Other Criminal Code crime. There were 31,370 offences in 1981 and 28,786 offences in 1982. This was a decline of 8.2% between the two years.

The number of bail violations (failure to comply with an undertaking, recognizance, summons, or appearance notice) also decreased substantially in 1982. Bail violations declined from 2,650 offences in 1981 to 2,001 offences in 1982, resulting in a 24.5% decrease.

Disturbing the peace was the only offence in this category to increase significantly. The number of offences was 2,858 in 1981 and 3,698 offences in 1982. This represents an increase of 29.4%.

BREAKDOWN OF CRIMINAL CODE CRIME BY OFFENCE TYPE
1981 and 1982



STATUS OF PIMS

Systems Support Branch
Computer and Research Services Division

The departmental personnel system (PIMS) has six sub-systems, some of which are integrated with each other and some are stand alone. These sub-systems are Recruitment, Staff Development, Personnel Profiles, Position Control, Employee Relations and Occupational Health and Safety. The implementation schedule for each of the sub-systems follows:

Recruitment and Selection	-	implemented April 1983
Personnel Profiles	-	implemented June 1983
Staff Development	-	implemented June 1983
Position Control	-	scheduled Sept. 1983
Employee Relations	-	scheduled Spring 1984
Occupational Health and Safety	-	scheduled Spring 1984

The PIMS system hardware consists of a central host computer and, currently, three Mohawk 2150 mini computers located in the Edmonton and Calgary Personnel offices and the Solicitor General Staff Training College in Edmonton. The main files of the system reside in the host computer and "local files" reside in the Mohawk minis. The computers communicate with each other using Mohawk's EM3270 emulator for interactive communication and EM3776 for batch communications. The main files of PIMS are ADABAS files. The teleprocessing monitor is MVDCOMP. The programs comprising PIMS are written in COBOL or NATURAL 1.2 (host) or MOBOL for local processing.

A brief description of each system which has been implemented to date follows.

THE RECRUITMENT SYSTEM operates independently of the host computer and is written entirely in MOBOL. The system monitors and tracks the competition process from Notice of Vacancy time to the closing of each competition. The recruitment system integrates data processing and word processing in that all letters of regret, certification, etc. are automatically and progressively printed. The system maintains files of previously and permanently regretted candidates including such information as: reason for regret, certified candidates by class, and also transfer request files. The system expedites the recruiting process and can produce recruiting statistics in a variety of forms. The system has the capability to automatically interface with future PAO recruitment systems.

THE PERSONNEL PROFILE is one of the main components of the PIMS system. Basically this is an electronic personnel file which is accessible by employee name. The profile contains information on the current status of a given employee in addition to containing all personnel-related events which happen in the course of an employee's employment. The information in this file is maintained in three ways:

- Entered on line by Solicitor General Personnel offices
- Captured automatically periodically from the AFIS payroll system

- Updated automatically from other PIMS sub-systems

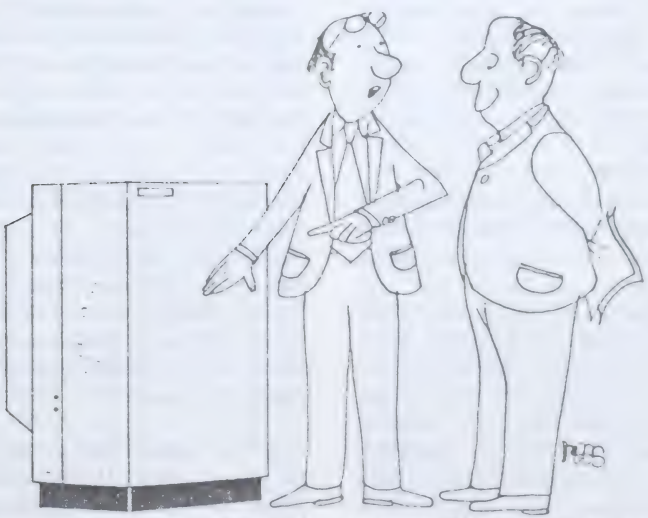
The profiles are accessible from the Personnel offices of the Solicitor General and will eventually become accessible from all Solicitor General institutions such as the MVD offices and the correctional centres, etc. The personnel profile system is intended for use by Personnel Officers, line managers and payroll groups within the Alberta Solicitor General. The profile provides a single, current, accurate and comprehensive departmental employee record.

THE STAFF DEVELOPMENT SYSTEM was designed with the intention of developing and maintaining a complete staff development record for each Solicitor General employee. The Staff Development system resides in the Mohawk 2150 at the Solicitor General Staff Training College and is written in MOBOL and NATURAL. Staff development events are divided into three categories: technical, general, and professional development. A record of all events are forwarded to the College where they are entered on the Mohawks and transmitted weekly to the host computers where they update the individuals profile. General and professional development events (which are much lower in frequency) are entered on line directly onto the profile.

In addition to maintaining profiles, the Staff Development system is capable of generating a variety of ad-hoc statistical reports from the database.

The remainder of the PIMS sub-systems will be described in more detail in future issues of The Informer upon their implementation.

Currently, a reduced team is working on the construction of the Position Control, Employee Relation and Occupational Health and Safety systems. Depending on available resources, the full PIMS system should be implemented by March of 1984.



The mainframe doesn't actually *do* anything any more – it just sits there and worries about all those intelligent terminals

COMIS AND THE MINI COMPUTER

Operations Systems Development Branch
Computer and Research Services

With the implementation of a computerized Correctional Management Information System (COMIS) in 1979, it was immediately clear that the Remand Centres at Edmonton and Calgary were responsible for over 60% of the overall activity on the computer system. Also, as these two centres operate on a 24 hour basis the computer system would have to match this availability in order for it to be effective.

Following a feasibility study, it was decided to introduce a mini-computer at each of these high activity points in the information network. Software would then be developed to service the Remand Centres on a 24 hour basis with full integration with the other Correctional Centres that comprise the COMIS network.

The implementation of a mini-computer version of COMIS was planned to take place in three stages. The first stage is to utilize the Data General mini as a cluster controller for the network of user terminals in the Remand Centres. The user terminals communicate with the IBM mainframe through the mini. In this mode, all data is stored on the mainframe.

The second stage of implementation involves having both a stand-alone system on the mini-computer with the additional capability for the user to communicate directly with the host mainframe for enquiry purposes. In this stage, daily activity information will be stored on the mini computer for the Remand Centres' operation and on the IBM mainframe for the operations of the other correctional centres. Overnight, a batch interface will be processed to update the movement and transfer activity between the remand and serving centres. Currently, the Edmonton Remand Centre is in the second stage of implementation of the mini version of COMIS.

A third stage of implementation is to have both a stand-alone system on the mini-computer with the additional capability for the user to communicate directly with the host mainframe for both enquiry purposes and immediate data transfer between the host and the mini. In this mode, daily activity will be stored on the mini-computer as identified in the second stage of implementation except that the data on the mini and the host will be kept in phase, thus eliminating the need for the overnight batch interface.

The new "mini-COMIS" was developed with significant enhancements over the mainframe verion of COMIS. These enhancements included: improved inmate name search techniques; bed location recording and reporting; more user-friendly data entry, data editing and enquiry screens; and enhanced reporting features. The user report generator features now include all elements of the database together with comprehensive data selection/constraint conditions. Data entry now includes significant user prompting and meaningfull error messages that have greatly streamlined the data capture process.

The introduction of mini-COMIS has allowed a wider accessibility to the system from the various units in the remand centres, for example:

visiting, medical, floor supervisors, etc. This has been achieved at lower unit cost than the previous mainframe system. Also there is a major reduction in the data communication costs with the introduction of the mini-computer.

ASSAULT REDEFINED

Research and Planning Branch
Computer and Research Services

On January 4, 1983, an amended Criminal Code of Canada came into force. The new Criminal Code redefined the offences of common assault, assault causing bodily harm and wounding.

Except for the maximum sentence which can be applied, common assault which is referred to as assault under the amended statute, remains essentially unchanged. Previously common assault was an offence punishable on summary conviction. This meant the maximum sentence was six months in jail, a fine of $500 or both the fine and jail sentence. Under the amended statute, assault can be treated as a summary offence or it can be treated as an indictable offence with a maximum sentence of five years. Conviction for any indictable offence carries a mandatory jail sentence.

Assault causing bodily harm as contained in earlier versions of the Criminal Code underwent more substantial changes. The Criminal Code now provides a definition of bodily harm. Bodily harm is defined as "any hurt or injury to the complainant that interferes with his or her health or comfort and that is more than merely transient or trifling in nature." In addition to defining bodily harm, the offence was expanded to include the act of assaulting another person while carrying, using or threatening to use a weapon.

The penalty for assault with a weapon or causing bodily harm was stiffened. Where previously it could be treated as a summary offence or an indictable offence with a maximum jail sentence of five years, it must now be treated as an indictable offence with a maximum sentence of ten years.

The third class of assault, previously referred to as wounding is now labelled aggravated assault. Wounding referred to assaults which caused bodily harm where there was the intent to wound, maim, disfigure or endanger life. With the revisions to the Criminal Code, aggravated assault refers to assaults which actually wound, maim, disfigure or threaten life. The penalty has remained the same. It is an indictable offence with a maximum jail sentence of fourteen years.

The recent changes to the Criminal Code have made assault a more serious offence. The Criminal Code now specifies more severe maximum penalties for assault and assault causing bodily harm. In addition the recent changes to the law have defined what constitutes an assault causing bodily harm.

MOTOR VEHICLE LEGISLATION UNDER CONSTRUCTION

Corporate Planning
Motor Vehicles Division

As part of the process of ongoing statutory review, the Motor Vehicles Division has proposed that several changes be effected to its legislation.

Firstly, it is proposed that the Off-Highway Vehicle Act and the Motor Vehicle Accident Claims Act be integrated into the Motor Vehicle Administration Act. It is also intended that substantive matters be transferred from the Regulations into the statute, and that certain provisions be amended where a demonstrated need exists. This should result in the enhanced clarity and effectiveness of the legislation in force, as well as the alleviation of difficulties which have been encountered as the result of certain provisions. This integration and implementation is currently planned for introduction in the spring of 1984.

It has also been proposed that registered owners of vehicles be allowed to renew the registrations of those vehicles throughout the entire year rather than only during the current registration period of March and April. This should enable MVD to provide more efficient service to its clients, as well as to reduce its cost of operation. The implementation of such a program of staggered registration would necessitate appropriate changes to the Public Vehicles Registration Fees Regulation as well as to the Regulations made pursuant to the Motor Vehicle Administration Act and the Off-Highway Vehicle Act.

In addition, substantial amendments to the regulations are being made including allowing personalized licence plates, restructuring of the operators' licence classifications based on axles rather than vehicle weight, and providing permanent licence plates for trailers, government vehicles and large fleets.

Thirdly, it is proposed that the Violation Ticket Regulation, made pursuant to the Summary Convictions Act, be amended in order to increase specified penalties. Court appearances would also be mandatory for certain offences, and the amount of the fines for these would be left to the discretion of the court. Such amendments are intended to emphasize the gravity of these offences.

Finally, it is proposed that a new licence plate classification system be introduced. At present, there are twenty-four different classifications, each with a distinct plate. Due to the complexity of such a system, it is now proposed to implement one which has four basic classifications (based on vehicle registration requirements) and three special ones (dealers, antique, and consular corps plates).

AN OVERVIEW OF CRSD PROJECTS

CORRECTIONS PROJECTS

The Inmate Trust Account/Incentive Pay System has been operating effectively since May in the Edmonton Remand Centre. User acceptance testing and training is now taking place at the Calgary Remand Centre on the Data General mini-computer. Programming activity is underway on the IBM mainframe version of the Trust Account System for implementation in the remaining institutions in late 1983.

The Data General mini-computer version of the Correctional Management Information System (COMIS) has been used in the course of conducting user training and acceptance testing. Implementation of the mini version of COMIS will allow the user to switch back and forth between the Data General mini and the IBM mainframe for enquiry and booking procedures. This design will allow the mini-system to be implemented using a "pilot" production procedure whereby the user can switch back to the IBM and continue work while a days input on the mini is being processed.

The interface between COMIS and the Attorney General's Court Automation Project (CAP) is now in the acceptance testing stage with the Attorney General. Work is still proceeding on minor changes to the COMIS/CPIC interface as a result of system testing activity. An additional upgrade implemented in July incorporated the reporting of one-sixth and one-third time served dates to indicate the inmates qualified for the Temporary Absence Program.

Three research projects are presently being conducted by the Research Unit for the Correctional Services Division: a length of stay project which examines the aggregate sentence and length of stay of inmates admitted to the provincial correctional system, a clothing issue project which involves surveying correctional officers to determine future clothing requirements, and a project which reviews the various techniques being used to project inmate populations.

LAW ENFORCEMENT PROJECTS

The Research Unit is currently conducting a Policing Costs study. This project is being conducted for the Law Enforcement Division and involves the collection of data pertaining to the costs of policing in Alberta. This data is to be updated yearly.

Using the newly created law enforcement research file, we are working on the development of a flexible method for reporting Uniform Crime Report data. The new reports will replace the previously produced POLIS reports which were comparatively inflexible.

A brief 1982 Crime Trends in Alberta summary report which compares the incidence of Criminal Code crime during 1982 to that which occurred in 1981 is now complete. A more detailed report is to be published shortly.

Five years worth of alcohol-related driving offence data was compiled and analyzed for the Law Enforcement Division who are presently reviewing the Alberta Check Stop program.

MOTOR VEHICLES PROJECTS

The Motor Vehicle Systems project (MOVES) is near the peak of programming effort. The communication modules between the host and mini-computer are not yet finished as programming of the Central Component has proved to be more complex than expected. We will likely be testing the communication for the remainder of the year.

The Microfilm subsystem has been demonstrated and passed from the development team to the test manager for final system testing. The Client subsystem is in the last month of development and will be passed to the test manager early next month.

Three subsystems have entered development this month: Vehicle Services, Finance, and Inventory. The final user reviews will take place shortly; programming has already started on some modules.

The Finance subsystem has taken a significant swing from the remainder of the system in that MSA software packages are being used for a good portion of the code rather than being custom developed.

The detailed design of the Vehicle Registration subsystem is due for completion within the month, and Operator Services will follow.

The targeted implementation date of our new motor vehicle system remains unchanged at June 1984. The involvement of motor vehicle operations staff in the development and testing of the system is increasing dramatically. This should result in a smooth transfer of ownership from the systems staff to the users upon implementation.

The advance sales of the new silver-grey, orange and blue licence plates are scheduled to begin in October.

DEPARTMENTAL SUPPORT PROJECTS

The Absent Time Reporting System (ATRS) developed by Central PAO will become available to our Department during September. It has been decided to use the on-line version of the application.

The Department has made available the MMPI system to Dr. Thauberger of the Edmonton Institution. Equipment is currently being installed and all access controls have been secured.

Considerable delays have been experienced in the software development of the CPIC/Corrections interface. It is anticipated that the interface will be completed in September or October.

Departmental technical support and network staff are investigating alternative network options for the MOVES project. Any network and network monitoring capability will be coordinated to merge with Departmental system requirements.

During July the Driver Demerit system was converted to an on-line system. System maintenance and enhancement responsibilities were returned to the Department.

It is estimated the 1983 Supplement to the Compendium of Criminal Justice Statistics will be complete this fall. The supplement reports police, court and corrections data for the period 1978 to 1982.

WTHT VWLS SOLUTION

STRT	-	Saturate	8 points
PRDC	-	Periodic	8 points
PRN	-	Paranoia	8 points
VLT	-	Evaluate	8 points
PCS	-	Eyepieces	9 points
BTS	-	Beauteous	9 points
TML	-	Oatmeal	7 points
CHS	-	Icehouse	8 points
LLT	-	Loyalty or Ululate	7 points
CHT	-	Chateau	7 points
THNS	-	Euthanasia	10 points
RFLD	-	Airfield	8 points
RTR	-	Oratorio	8 points
MNNS	-	Mayonnaise	10 points
SPCS	-	Auspicious	10 points
TOTAL SCORE			125 points

HOW TO TELL A MALE ADMINISTRATOR FROM A FEMALE ADMINISTRATOR

A male administrator is dynamic; a female administrator is aggressive. A male administrator is firm; a female administrator is inflexible. He is good on details; she is picky. He loses his temper; she is bitchy. He is a real go-getter; she is pushy. He follows through; she doesn't know when to quit. He is confident; she is stuck up. He has dreams; she has delusions of grandeur. He has the courage of his convictions; she is stubborn. He is a man of the world; she's "been around". He can hold his liquor; she's a lush. He isn't afraid to say what he thinks; she is mouthy. He is human; she is emotional. He exercises authority diligently; she is power hungry. He is close-mouthed; she is secretive. He can make decisions quickly; she is impulsive. He is a stern taskmaster; she is hard to work for. He is experienced; she has been through the mill.

Adapted from:
Hampton, David R. Instructors Manual to Accompany Contemporary Management. 1977 New York: McGraw-Hill.

THE INFORMER

A Publication of Computer and Research Services

4th Floor, Melton Building, 10310 - Jasper Avenue, Edmonton T5J 1W4
VOL. 1, NO. 5 September, 1983

THE EDP PLAN: A FIVE YEAR FORECAST:

The Systems Support Branch
Computer and Research Services Division

The Computer and Research Services Division, as part of the 1984/85 Budget process, completed a five year Electronic Data Processing (EDP) Plan in support of the 1984/85 EDP Budget Request for the various programs in the Alberta Solicitor General. The five year plan is a multi-purpose document consisting of three major componenets: a long range EDP forecast covering 1984/85 - 1988/89, a 1984/85 operational plan, and 1984/85 Budget Request details.

The long range EDP plan details EDP objectives and activities for each system or project for each of the five years along with the forecast of resources required. The EDP operational plan describes in detail the more immediate objectives and requirements. It supports the budgetary and resource requirements for the upcoming fiscal year. The 1984/85 Budget Request details the manpower, equipment, services, facilities, materials, supplies, and funds needed to accomplish the objectives in the plan for operating and developmental systems. Variances from the previous year's Budget are justified in detail by price, volume and other contributing factors.

Alberta
SOLICITOR GENERAL

Currently, the objective approach is used in the planning process and the preparation of the EDP plan. First, both the objectives of each program and how well the current information systems support these objectives are examined. Short term and long range EDP requirements are then identified for funding consideration in the budget review process at the program, and finally, at the department level.

The final EDP plan document consists of five sections; namely, executive summary, departmental review, needs and requirements analysis, a systems plan and program plans.

The Executive Summary provides a departmental summary of the EDP budget, manpower requirements, hardware and software requirements for the current year, the new year, and succeeding years. A schedule of activities for all systems over the current year, the new year and the succeeding year are detailed using gantt charts to indicate timelines and type of activity, i.e., SDM/70 phases scheduled for each month. Major problems and opportunities such as resource availability, legislative changes, hardware and software obsolescence, economic climate and other factors which may affect the EDP plan are summarized.

(EDP Plan continued....)

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The Departmental Review section describes the goals, objectives, activities and undertaken by the department. It also includes an organizational chart depicting the structure which supports the various program areas. The structure of the Computer and Research Services Division is detailed to indicate how it supports departmental and program goals and objectives. The planning and preparation methodology of the EDP plan is also described.

The Needs and Requirements section provides a general analysis and rating of existing systems with respect to design and operation, including identification of enhancement requirements. Each new system proposed in the EDP plan is defined including a system description, requirements and the objectives supported.

The Systems Plan section contains detailed descriptions of existing, developing, and planned systems as well as systems undergoing major enhancements. Each system is detailed in four parts. The first part includes a description of the system, its relationship to other internal or external systems, user and EDP contacts, identification of responsibility for development, operation and maintenance, control mechanisms, and the program activities or objectives supported. The second part details each system's expenditure and budgetary requirements for all internal and external resources such as manpower, supplies and services, and hardware and software for the current year, the new year, and succeeding years. The third part covers the justification of new or planned systems only, including objectives supported, analysis of need, and expected benefits. The fourth part details all hardware and software used by each system, whether leased or purchased.

The Program Plan provides EDP budget, manpower, hardware and software summaries for each program areas for the current year, the new year, and succeeding years. The program budget summary details the total annual EDP costs including the major cost breakdowns for each system. The program manpower summary provides a list of all manpower, man-years and dollars required for each system. The program hardware and software summary lists all hardware and software required including description and costs.

Forty-one systems or projects are identified in the current EDP plan for the four programs in the department; six in each of the Correctional Services and Law Enforcement; seven in Motor Vehicles Registration and Driver Licencing; and twenty-two in Departmental Support Services. The department's current EDP budget is distributed among the Motor Vehicle Division, (76.8%), Correctional Services (8.2%), Law Enforcement (0.4%), and Departmental Support Services (14.6%).

CRIME STATISTICS

Research and Planning Branch
Computer and Research Services

Crime statistics have become standard fare in news reports. To appreciate these reports, the reader should know how these statistics are collected.

Police departments are required by law to collect information on crime. How they collect these statistics is governed by the Uniform Crime Reporting program, UCR for short. Begun in the United States in the 1930's, UCR was adopted by Canada in 1962.

Under the UCR program, police collect 10 pieces of information on each of a large number of different crimes. Each month and for type of offence, police record the number of offences reported to them or that they become aware of, the number of these reported offences that upon investigation are discovered not to have taken place and the number of actual occurences of the crime. Police also collect statistics on the number of offences which are resolved by a charge being laid and the number of offences which are uncleared (charges for which police had enough evidence to lay a charge but for some reason did not). Finally police record the number of adult males and females and juvenile males and females charged with the particular type of crime. They also record the number of juveniles who could have been but were not actually charged.

If an action contravenes a particular section(s) of the Criminal Code or other statute, it is classified by UCR as a particular type of crime. The use of strictly legal definitions can cause actions which are very different in character to be recorded as equivalent. For example, because the Criminal Code does not distinguish between the theft of a used $250 television and the theft of a multi-million dollar art treasure UCR records both of these thefts as equivalent events. In addition, except for attempted murder, UCR does not distinguish between the actual commission of a crime and the attempt to commit it.

Most of the public reporting of UCR information focuses on three classes of Criminal Code offences: offences against persons (often called violent offences), property offences and a residual class of offence referred to as 'Other Criminal Code Offences'.

Murder, manslaughter, infanticide, attempted murder, the various types of sexual assault and other forms of assault and robbery fall under the heading of offences against persons. Police record the occurence of one violent offence for each victim of one of these crimes. Thus, if during a single incident, five people are murdered, the police would record that five offences took place.

Property Offences include the various types of breaking and entering, thefts of all kinds, possession of stolen goods and fraud. Unlike violent offences, the counting of property offences is not based on the number of victims. Rather one property offence is recorded for each separate and distinct incident. For example, if in one evening a burglar broke into ten different apartments in the same building, police would record

a single instance of breaking and entering.

The class of Criminal Code of Canada offence called 'Other Criminal Code Offences' includes all the Criminal Code crimes that are not included in either of the above categories. Recording Other Criminal Code offences follows the rules that apply to recording property crimes. It should be noted that Criminal Code driving infractions such as impaired and dangerous driving are excluded from the Other Criminal Code Offence category.

When several offences are committed during the same incident, police invoke the UCR's 'multiple offence rule' to decide how to classify the event. Without going into the details, this rule states that if more than one offence occurs during an incident, that only the most serious should be recorded. For example, if during a robbery, a restricted weapon is used, the incident would be recorded as a robbery because robbery is considered more serious than possessing a restricted weapon. By recording only the most serious offence, the multiple offence rule causes an under counting of offences.

Care must be taken when interpreting UCR produced statistics. There are a large number of factors which determine how much crime is reported to and by the police other than the actual amount of crime in society. Even though all police departments are expected to follow UCR recording rules, there are differences in recording practices between departments. This makes comparisons hazardous. In addition to recording differences, such factors as the resources available to police, police procedures and the willingness of the community to report crime affect how much crime is brought to the attention of police.

Reporting crime statistics is a very complex problem. In addition to the actual amount of crime in a community, UCR's recording rules, local policing practices and the conditions which exist in the community determine the amount of crime which is ultimately reported by police. UCR statistics do not provide a perfectly accurate accounting of how much crime occurs in a community. They are only one indicator of the amount of crime taking place in a community.

VIDEO DISPLAY TERMINALS

Research and Planning Branch
Computer and Research Services

In recent years, governments, businesses, and private users have greatly increased their use and dependence on computers and video display terminals (VDTs) for quick retrieval and storage of data. This development has markedly increased the productivity of many offices, but it has also given rise to a growing concern about the potential effects that VDTs may have on the health and well-being of the people who operate them.

Studies done in Europe and North America have confirmed that VDT

operators experience physical and mental complaints which run the gamut from eye strain to severe depression. The symptons include:

- soreness, redness, stinging, itching, irritation, and general discomfort of the eyes;
- neuro/muscular pains in the neck and back;
- dull headaches, sometimes above the eyes, sometimes difficult to locate precisely;
- loss of visual acuity (seeing blurred or double images and fuzzy, coloured fringes);
- dizziness and nausea;
- problems with glasses and contact lenses.

In the United States, Canada and other industrialized countries, VDT operator symptoms have come to represent the largest single group of occupational health complaints registered with the Occupational Safety and Health Administration (OSHA) and its European counterpart agencies and trade unions. It should be noted that such complaints are reported and documented only when they achieve clinical proportions or interfere seriously with job performance; it may therefore be infered that a large number of subclinical complaints are not reported, but nevertheless exist and cause health and performance decrements in varying degrees.

While many studies conclude that VDTs are as safe as watching television, the concern over potential health hazards still remains. For one, operating VDTs are usually part of the job and not a matter of choice. Also, the distance between the operator and the VDT is much closer and the interaction between the operator and the machine is for a longer duration period than one would normally experience watching a television set.

Since most people will eventually operate a VDT, either as part of their job or at home on thir personal computer, the Informer will run a series of articles to look at some of the key issues in the controversy over video display terminals. The remainder of this article examines the issue of VDTs and radiation.

According to recent media reports, medical experts are not in agreement concerning the radiation effects of computer video display units or VDTs.

Video display terminals are capable of producing several types of electromagnetic radiation depending on its operating characteristics. These radiation effects can be categorized into two main types: ionizing and non-ionizing radiation. Ionizing radiation takes the form of x-rays. The cathode ray tube (CRT) and the electronic damper circuits of VDTs are capable of generating low energy x-rays. Medical evidence has shown that sufficient exposure to x-ray radiation has the potential to cause skin rashes (radiodermatitis), premature aging, cataracts, and cancer as well as affecting a person's reproduction capability.

Sources of non-ionizing radiation include ultraviolet light, infrared waves, microwaves, radio frequencies and static electric fields. Depending on the phospher used, ultraviolet, visible, and infrared radiation can be emitted from the screen of video display terminals. Certain electronic components and circuits can also produce radio-frequency radiation.

Much concern has been expressed over these types of non-ionizing radiation since sufficient exposure can cause cataracts, corneal lesions, chromosome damage, blood

disorders, miscarriages, retarded fetal development, and birth defects. Due to this concern, tests have been done on suspect terminals and significant levels of radiation have not been found. In addition, significant improvements have been made in the design of cathode terminals so that ionizing radiation from these newer VDTs are negligible. While these results should rest any fears operators may have over VDTs, people are still concerned over two other major radiation issues.

These concerns centre on acceptable levels of exposure to possible radiation and other VDT hazards; and the effects of cumulative exposure. As the National Action Committee on the Status of Women point out, there is no known safe level for radiation exposure and government standards of what is "safe" can change, as was the case with asbestos. This committee and many unions argue that perhaps old VDTs or inadequately maintained VDTs emit more radiation. Also, some type of synergism or multiple effect may occur in a worksite comprised of several VDTs that could amount to a significant level of radiation exposure.

Brian Phillips, the non-ionizing radiation officer at Alberta Occupational Health and Safety, believes as do other radiation officers that the controversy over radiation effects from VDTs should really be a non-issue. He states that: "Based on what we know about the effects of radiation, the levels of radiation and the types of radiation, the evidence is very strongly against radiation being the problem - for unborn children, much less operators."

While many studies have found no evidence to support the claims that VDTs are responsible for radiation health hazards, other scientific research holds that not enough is known about the long-term effects of low levels of radiation to warrant full confidence in the non-hazardous nature of video display terminals. More research is needed in this area to sufficiently explore the long term effects of low level radiation.

Meanwhile, computer companies have and are constantly improving the nature and design of their video display terminals so that the radiation level of VDTs may, in some cases, be actually less than than produced by our own bodies and natural environment. Despite these many improvements, complaints about VDTs still abound. These may arise, however, from problems not involving radiation at all but from the larger office operation. The Informer will examine this issue in next month's edition.

"If low-level radiation is so safe, why are the bosses' offices so far away?"

OFFICE AUTOMATION

Computer and Research Services Division

In recognition of the technological advancements made in the automation industry and the potential impact that this technology will have on the office environment, the Department has initiated a project which will investigate the potential for implementing office automation within the Alberta Solicitor General. A project position has been recently staffed which will report to the Director of the Computer and Research Services Division and subsequently the Departmental Senior Management Committee. The incumbent will be responsible for the development of a corporate stragetic plan for an integrated approach to the automated office and information sharing throughout the department.

A major outcome of the project will be an implementation plan which will address: technical aspects of the automated office; organizational implications of automating office functions; and the human engineering issues and concerns such as education and training, health and job satisfaction.

Potential areas that the study will address include:

- Personal computing
- Word processing
- Electronic and voice mail
- Decision assist
- Administrative assist
- Image processing (graphics)
- Networking

Additional information will be included in the newsletter regarding office automation, especially as it affects the Alberta Solicitor General, as the project study progresses.

SOLICITOR GENERAL'S SYSTEM PLANNING: A CHANGING PROFILE

Computer and Research Services

The composition of the Alberta Solicitor General's Electronic Data Processing (EDP) Plan is making a significant transition in the next fiscal year. The period of 1978 to the present has been highlighted by a rapidly growing systems development budget. Significant computer systems were developed for Corrections, Law Enforcement, Personnel and Motor Vehicles Divisions; with the development peak being reached this year mainly due to the sizable Motor Vehicle project. Planning for 1984/85 reflects a year of implementation and enhancement, with a trend towards smaller development projects, packaged software, and concentration on hardware and network-

ing. The Department's efforts move to a concentration on "use of information" rather than the "collection of data", characterized by heavy systems development.

The first half of the new year will be oriented to the implementation of several new systems. The new Motor Vehicle system, an interim Young Offenders tracking system, a new General Ledger and Encumberance system, and the final portions of our Personnel system are all scheduled to enter production. The efforts required to support the necessary data conversions, hardware installations, training, and immediate software fixes or enhancements required are expected to consume most of our resources for the whole year.

The base of systems in production by year end will encompass all Divisions in the Department and will collectively touch on almost all operations. The access and presentation of operations and administrative information will be mainly from computer data files, and system expansions resulting from use of the data will become the new area of concentration.

Equipment to support the computer systems we have developed has been acquired in a shared environment through Alberta Public Works, Supply and Services (APWSS). The growth of our computer loading and the nature of our operation has prompted planning with APWSS to have our applications placed on an independent processor. We are expecting to be migrated to a new processor early in 1984, prior to implementation of our new Motor Vehicle system. The extent of network and peripheral sharing is being discussed, with the expectation that APWSS will run our Departmental systems as a relatively independent entity.

Our current computer network has equipment in thirty office locations around the province. In addition, another forty locations have dial up access to our systems. The expansion by twenty-five to forty new locations next year and the implementation of VTAM (allowing any terminal physical access to any system) is causing us to re-plan our entire network. The new plan will allow us to have different systems share the same lines, and will allow some administrative systems to be accessed by all Departmental terminals.

An overall office systems study has been undertaken to develop an implementation plan for office automation in the Department. In addition to evaluating the traditional topics, this study will address maximizing the use of our network for overall information distribution and possible use of the "information centre" concept. The ready access to terminals installed for operations oriented systems throughout our regionalized Department supplies a powerful tool for communication. The office systems plan should reduce non-standard approaches being used to address localized needs, reducing duplication of equipment and software.

In summary, the next year will be very eventful. The transition to an information based society is happening, and our systems planning is a reflection of our efforts to support this trend.

COMPUTER AND RESEARCH SERVICES DIVISION

ORGANIZATIONAL CHANGES

There have been some minor changes made to the CRSD organizational structure and titles therein. The adjustments have been made to more accurately reflect the responsibilities and correct some discrepancies.

The System Support Branch retains the same name; but Development of Departmental Support systems and maintenance of all systems has been transferred out while Database Administration has been transferred into this Branch. The four units within the Branch are now Administrative Support, Documentation Support, Hardware Support and Database Administration.

The Research and Planning Branch is renamed the Research and Information Branch, with the two units therein retaining their Research and Information and Statistics title.

The Operations System Development Branch is renamed to the the Application Software Branch, reflecting their change in responsibility to development and maintenance of all application software for the Department. The four units will now be called Corrections Systems, Motor Vehicle Systems, Law Enforcement System, and the new Departmental Support Systems.

The two vacancies in the management unit of CRSD will soon be advertised: the Assistant Director, Research and Information and the Manager, Departmental Support Systems.

AN OVERVIEW OF CRSD PROJECTS

CORRECTIONS PROJECTS

The Inmate Trust Account/Incentive Pay System has been implemented at the Calgary Remand Centre following user training and acceptance testing. Conversion from the manual accounting records and start-up went smoothly. The IBM version of the Trust Account System is in system testing. This system has been developed using ADABAS as a database manager and NATURAL as an on-line monitor. Following a relatively short learning period on these products, productivity is increasing substantially and the programming staff are particularly impressed with NATURAL as a screen "builder". The first implementation of the IBM version of the Trust Account System is scheduled for November, 1983.

Orders have been placed for additional terminals and printers to support the implementation of ITAS in the correction centres.

Major upgrades to the Name Search and Offender Profile printing facilities were added to the production COMIS system in August. The Name Search features added

included the phonetic search capability and a more user friendly screen format and display feature. The layout of the Offender Profile was upgraded to include the Temporary Absence indicator dates of one-sixth and one-third time served as well as well as improving the overall layout.

Testing is in a final stage for both the mini-computer version of COMIS and the COMIS/CPIC interface. The COMIS/CPIC interface will be set up in a "pseudo production mode" to allow for a complete volume testing procedure to take place through the new mini computer prior to final implementation.

Initial groundwork is taking place on the design requirements for the Young Offender program, incorporating where permitted facilities to assist the Community Corrections programs. A short term solution is envisaged to be implemented April 1, 1984.

Work has begun on a research design for examining some of the increase in inmate population experienced by the provincial correctional system. This project is an extension of the report Trends in Demand for Institutional Resources which identified several trends in inmate population growth. The present study will attempt to identify the causes of these trends.

A "Daily Population Statistical Research File" was recently developed in an attempt to capture "current status" information on a daily basis. The file essentially contains the same information as is contained in the automatically generated Daily Population report.

LAW ENFORCEMENT PROJECTS

The detailed 1982 Crime Trends in Alberta summary report is now complete. The report compares the incidence of Criminal Code crime during 1982 to that which occurred in 1981 for each of the following types of policing jurisdictions: Municipal Police, Municipal R.C.M.P., Provincial R.C.M.P. (Rural), R.C.M.P. Total, and the Alberta total. The last issue of The Informer, Vol. 1, No. 4, discussed the major findings for Alberta.

Individual summary 1982 Crime Trend reports were prepared for eight municipalities. These reports examined the growth of crime in Barrhead, Camrose, Coaldale, Lacombe, Lethbridge, Medicine Hat, Red Cliff and Taber between 1981 and 1982.

MOTOR VEHICLES PROJECTS

The main event in the Motor Vehicle systems area for this period was the mailing of renewal notices for most vehicles in the province. The notice invites the public to register their vehicles into a staggered renewal schedule and receive their new licence plates.

This renewal is the first time that the province has used an automated mailing machine to insert multiple notices (from two to six) into a single envelope. A very significant savings in postage and material is realized by this procedure in addition to the convenience

afforded the public and post office in handling fewer envelopes.

The Motor Vehicle Systems project has reached a new level in programming effort. Vehicle Services, Vehicle Registration Services, Inventory and Finance subsystems are all currently in the coding and testing stage. The Operator Services subsystem is at the program specification stage and it will be joined by Enforcement - the last major subsystem - later this month.

System testing is becoming an area of concentration as the Microfilm and Client subsystems have joined the Central component in the demonstration library; Inventory and Vehicle Services are to be migrated there shortly. Test managers from the system and user areas exercise all code in the demonstration library, concentrating on code stability and operator friendliness respectively.

The Research and Planning Branch has just begun to analyze the MVD management reporting requirements. The goal of this project is to design a statistical graphics package which will summarize and highlight activities at all levels of management within Motor Vehicles using data from the New Motor Vehicle System (MOVES).

Ten of the eleven Motor Vehicle Offices have now received and have in operation the new Distributed computer equipment required for the new system. The new equipment is currently being used to access the present Motor Vehicle system.

The August Motor Vehicle Division Transactional Log report was recently completed. This report is produced monthly and analyzes the volume and type of transactions which occurred in each of the MVD field offices.

DEPARTMENTAL SUPPORT PROJECTS

The Research and Information Branch has developed a sophisticated computer graphics capability which enables us to more effectively portray various Departmental statistics. Graphs are currently being used very effectively in various management reports to summarize and highlight data. A "Sample Graphics Package" was recently sent to each of the Divisions in the Department for distribution. The package displays ways in which graphs may be used to present statistics and enhance reports.

The payroll procedures manuals being developed by Systems Support are now fully completed and fill eight two-inch binders. Work has now started on the Revenue procedure manuals with a completion date tentatively set for the year end.

Planning continues on the Department's network requirements, in preparation for the implementation of the new Motor Vehicle system, at which time a heavy increase in data transmission will be experienced. Network monitoring equipment is being evaluated for suitability with our equipment.

A demonstration of the Department's Personnel System (PIMS) was held in Red Deer on September 22, 1983. The demonstration used dial-up facilities on the equipment set up in a hotel.

FOUR TIMES NINE

Using only four 9's and standard arithmetic operations (+,-,x,÷,$\sqrt{}$), it is possible to produce each of the numbers from 1 through 20.

For example: $1 = (9+9) \div (9+9)$

$2 = (9+\sqrt{9}) - (9-\sqrt{9})$

$3 =$

$4 =$

$5 =$

$6 =$

$7 =$

$8 =$

$9 =$

$10 =$

$11 =$

$12 =$

$13 =$

$14 =$

$15 =$

$16 =$

$17 =$

$18 =$

$19 =$

$20 =$

Can you do the others? Keep in mind, 99 is two 9's.

For Your INFORMERation

As of October 1, 1983 the Correctional Management Information System (COMIS) will acknowledge a new correctional centre, the Lakeside Correctional Centre. Lakeside is located on the grounds of the Lethbridge Correctional Centre and has a minimum security classification. The centre houses both male and female inmates who are sentenced for a period of up to two years and has the capacity to hold 43 male and 7 female inmates.

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According to census data, Alberta contained 8.0% of Canada's population in 1976, and 9.2% of Canada's population in 1981.

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In the five year period between 1978/79 and 1982/83, the number of vehicles registered by the Motor Vehicle Division increased by approximately 25% from 1,630,411 registered vehicles to 2,035,573 registered vehicles. In comparison, Alberta Municipal Affairs estimated the population growth between 1978 and 1982 to be approximately 18%.

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The rate per 100,000 population for property offences in Alberta has increased 25% from 1978 to 1982. Property offences include break and enter, theft of motor vehicles, theft over $200, theft $200 and under, possession of stolen goods, and frauds.

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THE INFORMER

A Publication of Computer and Research Services

4th Floor, Melton Building, 10310 - Jasper Avenue, Edmonton T5J 2W4
VOL. 1, NO. 6 November, 1983

THE ALBERTA HIGHWAY PATROL PERFORMANCE MONITORING SYSTEM

Research and Information Branch
Computer and Research Services Division

The Alberta Highway Patrol is a unit with the Law Enforcement Division of the Alberta Solicitor General. Their task is to enforce traffic-related provincial and federal statutes on Alberta's highways. The enforcement areas primarily pertain to operating authorities, weight restrictions, special truck equipment, and non-moving offences against the Highway Traffic Act, the Fuel Oil Administration Act, and the Motor Transport Act. Highway Patrol officers are appointed as special constables under the Police Act.

The Highway Patrol operates from three regional offices which comprise a total of twenty-nine units. Between them, all major highways as well as county, municipal, forestry and occupational roads are covered. The Patrol divides its working hours between enforcement activity and what is termed general activity. Enforcement activity consists of routine patrol and vehicle checks which may, or may not, result in written warning or prosecution under the various acts. General activity includes office administration time, court time, assistance to the police and the public, vehicle maintenance, and training.

Alberta
SOLICITOR GENERAL

In June 1981, a performance monitoring system was implemented by the Highway Patrol. Each officer is now required to complete a daily activity record throughout the course of his or her shift. The patrol officer records the number and type of vehicles inspected, whether a prosecution or warning results from the check, the specific location of the inspection, the licence number of the vehicle involved, and the amount of time expended on the enforcement action. A breakdown of the time spent on general activity is also scored by the officer.

Using the raw data scored on the daily records, the Research and Information Branch produces a quarterly statistical report. Senior management is apprised of the total number of working hours of the Patrol for that quarter, the breakdown of enforcement and general activity time, the class and size of vehicles inspected and the type and number of weigh scales employed. Information regarding the amount of enforcement hours spent on each highway and road by weekday is also tabulated. In addition, a comprehensive record of each individual patrol officer's productivity is compiled for that quarter. Similar statistics are also generated for the regional and unit levels, excluding individual officer performance.

The data is presented in a graphic and tabular format for easy assimilation. Once a year a summary statistical report is generated with a written analysis of trends.

The statistics obtained from the performance monitoring system have proved helpful to the Alberta Highway Patrol in: assessing their workload, personnel allocation (both between unit offices and on the highways), and in budget forecasting.

Contributions to THE INFORMER are welcome from our readers, particularily regarding announcements, articles, or events which affect a program area within the Alberta Solicitor General. Articles offered for publication or requests to be added to our distribution list should be directed to:

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ERGONOMICS AND VIDEO DISPLAY TERMINALS (PART II)

Research and Information Branch
Computer and Research Services Division

If radiation from VDTs is not considered to be a public health hazard, why are there so many health complaints among VDT operators? The answer to this question may lie in the field of ergonomics - the scientific study and planning of the work environment to adapt it to best meet the physical and mental needs of the worker.

Video display terminals are the most important change to occur in the office since the invention of the typewriter. With it, information can be compiled, stored, and produced far beyond the capabilities of any human effort. Unfortunately, while the new office of the computer age also has the potential to bring major improvements to its workers, the emphasis in the design of equipment, office environment, and working process has been on increasing productivity, with little or no attention paid to worker comfort and health. This situation is of particular concern since the majority of clerical staff are fairly young. Health drawbacks from badly designed workplaces can take some time to develop as ailments, and are only noted at first as nuisances. The irony of this situation is that if employee complaints over everyday irritations of the job are disregarded, the employers eventually reduce their own hopes of increased productivity and efficiency at the expense of the video display operator.

Health hazards stemming from ergonomic or biotechnological sources have been well-documented in the literature. In fact, many studies conclude that the design of the workplace is probably the single most important factor in reducing the likelihood of video display operators experiencing any adverse health effects.

Most VDT and ergonomics concerns centre on the general attitude and approach of most businesses. That is, when technological changes are introduced, they are generally done on a substitution basis rather than instituted as a planned total change.

The following is typical of the introduction of VDT equipment in an existing office environment. The video display unit arrives and is placed on the same desk where a typewriter had been. The operator settles in to work on the VDT using the same chair in front of the same desk designed for typewriters. The lighting remains the same which is usually brighter than necessary for the new machine. The VDT may even have been placed near windows which can create glare in the operator's eyes. Thus, while the operator may have received considerable training in using the new equipment, very few modifications are made to the work environment.

Very simple changes in this work situation could significantly reduce problems for the operator at very little expense. For example, minor adjustments in furniture can reduce strain on back and arm muscles while modifications made to the lighting system can work to reduce glare, fatigue, and eye problems as well as presenting a more relaxed atmosphere.

Current research has shown that good eyesight is not damaged by work on a VDT, but the eyes may become fatigued if an uncorrected defect in vision exists and/or if the illumination characteristics of the job are inappropriate. This has prompted the institution of mandatory eye-tests in many workplaces so that any problem can be corrected before the operator uses the VDT.

The field of ergonomics can be divided into certain important areas to which particular attention should be paid. Specifically, these include:

- The standard of accommodation - with particular concern paid to heating, ventilation, and ambient lighting;
- The type of seating - it should allow for a comfortable and efficient posture while viewing the display;
- The layout and location of the keyboard (a separate keyboard is preferable as it allows more flexibility in the system).
- The display - viewing distance, screen tilt, display size, character clarity, colours of image and background, and contrast and luminosity are factors that should be considered.

More specific recommendations for the design, installation and use of video display terminals follows:

Terminal Requirements

1. The keyboard and display unit should be separate.
2. The screen should have operator controlled brightness and contrast adjustments.
3. The screen should have an anti-reflection coating or a contrast filter.
4. The minimum character height should be 3 mm.
5. The spacing between the lines of text on the screen should be at least 1.5 times the character height.
6. The keys should have matt black or gray concave tops with clear white symbols on them.
7. There should be no highly reflecting parts to cause glare.
8. Where light falls directly on the face of the screen this should be fitted with a viewing hood.
9. The keyboard should be as thin as possible so that the tops of the keys are not raised unnecessarily above the working surface.

Environmental Requirements

1. Where hard copy has to be used the ambient illumination level should be adjustable. In other circumstances, a level of about 500 lux should be provided.
2. The primary direction of the lighting should be parallel with the face of the screen. Incident light should not fall directly onto the screen.
3. A generally uniform level of well diffused illumination should be sought.
4. Ceilings and Walls should be painted with matt pastel colours.
5. Proper control of temperature and ventilation should be maintained.
6. Any unnecessary steps to minimize static should be taken - these should include effective control of the humidity level in the working area.

Workstation Requirements

1. The working surface should be adjustable in height and sufficiently deep to permit adjustment of the operator screen distance.

2. The operator's chair should be adjustable for height and should have an adjustable backrest.
3. An adjustable footrest should be available for the use of short operators.
4. There should be no restriction on legroom available under the working surface.
5. Any document holder should be positioned close to the screen but should be operator adjustable. Provision of a direct hard copy light is advantageous.
6. For most operators the screen should be positioned at a viewing distance between 450 mm and 700 mm on the line of sight approximately 20 degrees below the horizonal.

Recommendations for Operators

1. Operators should be given adequate training before starting work and not expected to learn "on the job".
2. A full ophthalmological examination should be carried out, and if glasses are used these should be assessed for suitability of the correction for work on VDTs.
3. VDT operators under moderate visual demands should have at least 15 minute breaks away from the terminal after every two hours work. Where the operating conditions impose high visual demands or involve exacting repetitive work 15 minutes breaks should be provided after every hour of work.
4. Optimum positioning requires feet horizontal on the ground (or supported by a footrest), thighs horizontal immediately below the work surface, arms below the elbows horizonal and hands extended horizonally from the arms without a bend at the wrists. The screen should be positioned so that the line of sight to any part of it is between 10 and 40 degrees below the horizontal when the operator is sitting upright.

OFFICE AUTOMATION

Computer and Research Services

The office worker of today has been bombarded over the past several years with the term "office automation." While the concept may be easily understood, a great deal of confusion does arise over how and when it should be implemented within an organization. Computer vendors are producing more powerful, smaller and less expensive computers specifically for the office environment on a continual and increasing basis. These same vendors, together with outside consultants, are advising everyone on how, what, and where these new tools should be implemented. In addition, representatives of organizations who have attempted to use this technology have written articles and books describing their numerous success or horror stories. The result is that many office workers become bewildered

at the many alternatives and options available, while others recognize the potential for automation that exists in their specific workplace.

In an attempt to soften this confusion, a list of 50 alternatives or suggestions for automating office functions is presented. All are valid and feasible right now and are intended as food for thought. One could think of them as 50 ways to leave your ... manual office.

1. Obtain access to a terminal linked to one of your computing resources and use it to generate all your own documents (chances are that it will have some usable text editor and formatter). People will start to notice the high quality and faster turnaround that you get, and it is a good experience for you. (ADF-SCRIPT is used in our environment.)
2. Give your senior management terminals with some programs that can translate existing data (financial, operational, staffing information) on your department's computer into graphs, pie charts and other forms.
3. Attach to the above terminal a printer/plotter that your executive can use for giving output to staff and associates.
4. Attach to the same terminal a 35mm slide-maker to produce graphics appropriate for presentations.
5. Give your secretary a word processor for all your memos, letters, reports, etc.
6. Put a microcomputer in your department for your professional staff to use as functional support. Get spreadsheet, business graphics, and/or word processing software for it.
7. Obtain a cheap matrix printer for your micro that will support graphics and generate charts and diagrams for your reports.
8. Put word processing software onto your mainframe computer. Have your existing users employ it for documentation, report writing, etc. (ADF-SCRIPT, for example)
9. Put electronic mail software onto your mainframe computer. Start using portable terminals in conjunction with existing users and terminals to keep in touch with staff and management.
10. Put an on-line information retrieval interface onto existing databases, and give terminals to the people who most need timely access to this data. Try to replace some regular report generation with user generated ad hoc inquiries (COMIS Report Generator).
11. Place your research/reference librarian onto your messaging system. Have staff submit requests in the form of electronic messages, and answer them in the same way.
12. Give your financial manager a microcomputer with a spreadsheet utility, plus easy access to someone who knows the system.
13. Put your timesheets onto a system. Let your secretary input them every week. Make summaries available as required in graphical form (PC/70).
14. Let your professional staff input their timesheets through their own terminal. Realize greater accuracy and timeliness.
15. Put a project control system on top of your time-sheet system. Post time-sheet entries onto project budgets, track milestones reached, graph expected versus actual budgets.

16. Next time you do a questionnaire study, develop the text of the questionnaire on a system that has both statistical tools and word processing. By doing the data analysis on the same system, you will find the report easier and quicker to write.
17. Pick a geographically distributed department (or organizational component) and put it on a public (timeshared) electronic mail network.
18. Get a black box that enables one kind of word processor to communicate with another.
19. Start sending documents from one office to another using the communications option of your word processors.
20. Take a high-powered team of creative professionals (technical writers, professionals whose main output is reports, et al) and put them on a network of advanced professional workstations.
21. Put an index to your manual filing system on a computer and let both the users and the file clerks access it. Increase availability and decreased wrong filing (especially for subject-indexed systems). This lets users access files by any criterion they choose.
22. Use a microcomputer as a remote terminal instead of a dumb one. You can use the micro for editing the information you get, batching input, analyzing data, etc.
23. For meetings that involve geographically distant participants, develop agendas and hold preliminary discussions over electronic mail. Make the time spent together in a meeting more focused and productive.
24. Prepare your organization charts from the information in your personnel database (some reporting information may have to be added). With the addition of a simple graphics package, your charts will never be out of date.
25. Tie your organizational charts into the addressing scheme of the electronic mail system. Permit addressing to staff positions (e.g., office administrators) and departments (e.g., personnel) as on the MOVES electronic mail.
26. Put everybody in your company on the electronic mail system, regardless of whether they have computer access. Deliver the messages to users without computer access through the mail system. Put a printer in the mail room and users won't even have to concern themselves with how the message gets there.
27. For a series of meetings that involve geographically distant participants, lease or purchase some slow-scan video teleconferencing equipment. Using cheap and available telephone lines, the two or more groups in the meeting will still be able to see what is going on.
28. If you have an important user who is adamant about not using a keyboard, get a voice recognition device that can output the words it hears. Have him or her use it for the most frequent command words.
29. Start using a calendar scheduling system for meeting rooms. Take all the resources needed for meetings (rooms, projectors, etc.) and create them as entities in a scheduling system. Let the facilities coordinator maintain the information, but let users who are already on the system inspect the schedules themselves.
30. Once you have people using the system (or asking their secretaries to use it for them),

start putting meetings and other shared activities on the scheduling system. Let people get used to the system suggesting the next available times.

31. If there isn't one already, build between the scheduling system and the messaging system. When a meeting is scheduled, the messaging system automatically informs the participants.
32. Put public and private reminders into the messaging and calendar system. Notify users of holidays, personal items (such as anniversaries), and other important dates.
33. When you replace slower forms of text preparation with faster ones (word processors), use some of the secretary's or typist's time for more careful proof-reading or other extra-skill tasks. Use the change to create more interesting jobs.
34. As more of the secretary's time is saved using the office system support, increase the scope of the job description. Let talented secretaries become paraprofessionals, regardless of the type of business.
35. Find a printer or typesetting bureau that can take the output from your word processors and give you back phototypeset hardcopy. With very little extra work, you can get much higher quality and effectiveness.
36. If you have a large volume of typewritten text that you wish to include in your office system, input it using optical character recognition at the service bureau. Chances are there is one that can handle your type styles.
37. If you have too many typewriters to replace and typists to retrain, start a document creation procedure that includes optical character recognition linked to word processors. The bulk input is through OCR, and authors have their marked-up drafts handled by word processing.
38. Once you have professionals doing their own document generation on a system, add some of the many programs that analyze spelling, readability, syntax, and grammar. Emphasize quality, not volume.
39. Start buying desks with variable or typing-height surfaces (PWSS desks). Many of the people in your office will be using terminals in the next few years.
40. When moving or redesigning your offices, prepare the facilities with office sytems in mind. Plan ahead for extra power outlets, task lighting, air circulation, cabling, etc.
41. Store all your on-line text documents with a content search capability. You can never predict all the ways your users will want to access material for reference or review.
42. Use your list of names, addresses, and phone numbers as a dynamic contacts database. Each time a person is contacted (by phone or letter) update the database to indicate the date and nature of the contact.
43. Take the phone number fetched from the phone or contact database and link it into the phone system - have it dialed automatically.
44. Set up an abstract index of all documents in your company or departmental library. Let users browse through it at their terminals before they request materials.
45. Put a computer assisted instruction package on your system, and use it as part of the training package. Learning by example is the best way. You can also track user's prog-

ress with the training, and identify problems with the system.

46. Use dictation in conjunction with professional-use word processing. You can let the authors correct and edit the high-volume input.
47. If you have both voice and text messaging, integrate them using a combination phone and terminal device (now available from several vendors). You could have one MESSAGE button that sends a voice message if the phone is being used and a text message if not.
48. If you still have any regularly issued MIS-type reports coming out, use a name list on the system to selectively address the reports using the messaging system (with no ongoing operator intervention). No one gets any reports he doesn't want to see, and no one gets any paper at all (in this case, anyway).
49. Add to your messaging system some special capabilities to support the manager/secretary working relationship. Let a secretary prepare messages for the manager to send, let the secretary see some or all of the messages sent to the manager, etc.
50. Ensure the integration of every phase of your implementation. For example, anything (graphs, charts, data from a database, parts of a report) can be sent as a message, any data (from an appendix of a report, from a financial model) can be made into a graph (DISPLAY phone for MOVES).

...OUR ERROR...

In our last issue of The Informer, we published an article entitled "Crime Statistics" which pertained to the Uniform Crime Reporting (UCR) rules. There were a couple of errors in the article which were subsequently noted.

Firstly, there is no such term as "uncleared charges"; offences are either cleared by charge or cleared otherwise. The next erroneous statement dealt with the scoring of a break and enter situation. It stated " ...if in one evening a burglar broke into ten different apartments in the same building, police would record a single incident of Breaking and Entering". In fact, ten cases of Breaking and Entering should be scored according to UCR scoring rules.

DEPARTMENT PROCEDURES MANUAL PROJECT

Systems Support Unit
Computer and Research Services

A study conducted in 1980 on Administrative procedures identified the lack of effective standardized written procedures in the Solicitor General's Department. Subsequently, the Administrative Services Study project was undertaken in April, 1981.

The scope of the project was to document the procedures that were in place. As the project progressed, discrepancies and inconsistencies in the procedures were identified and the scope broadened in some areas to include assistance in the development of more efficient work flow and finer controls for audit purposes.

A workplan was initially created in early 1981 for the project. Lack of experience in such projects and oversimplication of the work that was required proved the time-lines of the workplan to be grossly inadequate for the project. The project was structured in line with SDM70 methodology and resources were controlled by use of PC70.

The project was divided into functional responsibility areas of Procurement, Payroll and Finance with manuals intended to be directly related to procedures for Supply Services, Payroll, Accounts Payable and Revenue.

The first task involved in the production of the manuals centred on the determination of manual format, style and presentation techniques. A common format was decided upon which divided the procedures into 1. CHAPTER, 2. SECTION, and 3. SUBJECT with the narrative being in the playscript style. The procedures were to be further clarified by the use of flowcharts and completed sample forms. This standard was to apply to all manuals for the project and this task was only required to be completed once. Standard updating procedures were also determined at this time.

The next task, initiating the work, required a general overview with the senior personnel in the area. From the results of this task, a general table of contents for the manual was developed and a schedule for interviews established. General manpower resource requirements and significant milestones were also identified at this time.

Detailed interviews were then conducted with a number of staff members in the particular work area. Generally, the interviews were restricted to one or two subjects. Each step of the work flow was evaluated and recorded. During this task, inconsistencies were discussed with supervisory staff for clarification.

As a result of the interviews a first draft of the work flow was documented. The style was playscript, identifying the responsible position for each function for listing the steps to be followed. During this task, the work flows and data were also displayed via flowcharts, and detailed instructions were given for completion of each field on the applicable forms. This draft was forwarded to the user for review.

At this point, details of the procedures, flowcharts, and forms were reviewed with the user to ensure complete accuracy. This task resulted in numerous changes - many people do not realize just how

many steps and checks exist in their work routine.

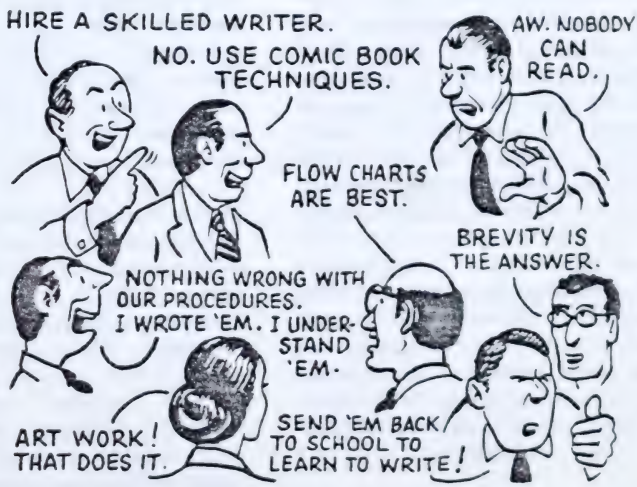
After this check was completed, the first draft was reworked to ensure that all corrections were adapted. The second draft again went to users and to senior personnel for sign off.

Finally, once the procedures had been approved by the user for each subject, all subjects were queued until the entire section was completed. At this point all the section material was produced at one time through Quick Print services, placed in manuals and forwarded to users.

The majority of this project has been completed with Supply Services being contained in one volume, Payroll in eight volumes, Accounts Payable in two volumes and Revenue being forecasted for one volume. The results of this project have interested other Departments who have submitted requests for the manuals.

Overall, the manuals provide a standard common reference and procedures are not lost as people leave and change responsibilities. The training of new employees is made easier with good procedural references.

The need for updates and changes have already started with changes to the Supply Services manual. Updates to the Payroll manuals are being deferred until PIMS (the Personnel Inventory Management System) is completed and ATRS (the Absent Time Reporting System) becomes a viable system. Changes to the Accounts Payable manual will take place concurrently with the adoption of MSA within the Department. It is also anticipated that the introduction of the MSA package will create a number of changes to both the Supply Services and Revenue manuals.



We found that some people were trying to improve procedures—through various means.

CORRECTIONS PROJECTS

The COMIS/CPIC interface is in final testing. Once VTAM/ENVIRON has stabilized and CPIC officials have finalized testing of the output, the interface will be released to the law enforcement agencies across Canada. Some minor enhancements have been made to the current MVD/CPIC interface, and detailed discussions have now started on the interface required for the new MOVES system. Checking of first time vehicle registrations against the CPIC stolen vehicle file is one new feature being considered.

The COMIS/CAP (Court Automation Project) interface has been implemented. On a weekly basis a file is created from COMIS of EXECUTED and TIME SERVED warrants which is then passed to CAP. CAP will allow COMIS users to access their system when CAP converts to VTAM.

System testing of the IBM version of the Inmate Trust Account System has been completed. Supplementary terminals and printers have been installed in CCC and (Calgary Correctional Centre) and FSCC (Fort Saskatchewan Correctional Centre); installation of equipment to the remainder of the correctional centres is to follow. User training is underway at CCC and training at FSCC is planned for early December.

The system for CCC will include a general ledger feature that allows users to enter journals on a screen and automatically post the entries to general ledger accounts. Detailed and Summarized Trial Balance Reports will be the initial output of this feature.

The FSCC system will include a special incentive pay screen to capture work programs, work rates, and work hours. This data will allow users to control the work incentive pay program.

Problems with ENVIRON/VTAM have forced a reversion to BTAM communication in December. Hopefully, the vendor can soon correct the problem as VTAM is essential in present and future system developments. It allows us to use the same terminals to access different computers and different applications. Inmate Trust Account user testing/parallel running has been put on hold awaiting a successful VTAM implementation.

An abbreviated specification has been prepared for purging old inmate files from the COMIS database. All files that have not been active since January 1, 1979 will be deleted from the active files and written onto magnetic tape files. The deleted files will still be accessible but not directly through the use of terminals.

Initial design requirements are being finalized for the Young Offender program. The requirements cover detention, community corrections programs and destruction of young offenders' records.

Draft copies of the Daily Population Statistical Package which is proposed to be produced on a monthly basis for Corrections were recently completed. A statistical graphics package is produced for each of the three Correctional Services' regions and for "Head Office". These reports provide regional and institutional level information on the average daily populational characteristics for a particular month. The data for the packages are taken from the Daily Population Research File.

MOTOR VEHICLES PROJECTS

The placement of vehicles onto a staggered registration cycle coincident with the issue of new licence plates is proceeding succesfully, with approximately 500,000 vehicles currently placed. The final renewal notice will be mailed in January to all vehicle owners not responding to the first invitation.

The data purification effort aimed at linking all vehicles belonging to the same fleet is near completion. This will allow renewal notices for fleets to be sent in a list format rather than individually. With the vehicles linked this way, it also becomes very easy to identify those eligible for permanment fleet registration, since the initial limitation is to fleets containing more than fifty vehicles. These larger fleets will be approached personally for placement over the next few months.

The final "tests" for conversion to the database for the new system have also taken place. A key concept in the design of MOVES is the "single client" concept and efforts have been made over the last two renewal cycles and through the data purification project to place common identifiers on all records. The effort has been successful as the first conversion "tests" show a very high success rate at linking client related operator, vehicle, and demerit history records.

Vehicle Registration and Finance subsystems are receiving the majority of programming attention on the MOVES project currently. The Operator subsystem is just entering the coding stage, and the last major subsystem, Enforcement, is entering final design. In February, we expect to hold the last "user review" of designed material for Enforcement, and it will then be passed to the programming teams.

System testing of the completed sub-systems is progressing favourably with Vehicle Services and Inventory being the last components to enter this stage. The "Change Requests" and "Discrepancy Reports" emanating from the systems testing are indicative in this area.

A new look is being taken at the extent of automation to be applied with the new system. The plans for automating eleven offices initially, increasing to forty in the first year may be extended. The cost benefit of equipping offices with lower volumes is being reconsidered as lower priced equipment is currently available.

The project development work for MOVES has been transferred to a dedicated 3033 processor. Isolation of the project will enhance the testing and development of MOVES and is the first step in running all Departmental applications on a dedicated CPU. A tender has been released by APWSS for a larger replacement CPU which can handle more memory and extended processing. This new CPU is expected in the second quarter of 1984 and a migration plan has been developed which will place all Solicitor General applications on this processor by late 1984.

The network requirements for the initial 29 automated offices to support MOVES have been identified. Continued work is being

done to more finely tune the probable response times in order that a final network can be configured. Along with the network plan, recommendations are being made for the purchase of a real-time pro-active network monitor.

All drivers convicted of an alcohol related driving offence must take an Impaired Drivers Course before being reinstated. Preliminary work began on a research project which will examine the effectiveness of this course.

The September MVD Transactional Log Report was distributed in November; the October report will be sent out shortly. Research File.

LAW ENFORCEMENT PROJECTS

The January-June 1983 Crime Trends in Alberta summary report was recently completed. The more detailed version of this report is currently underway and will be complete by early January. The next issue of the Informer will contain statistics pertaining to crime in Alberta during the first six months of 1983.

The Research Unit in conjunction with the Law Enforcement Division prepared a tentative format for reporting monthly and quarterly uniform crime information.

The Research Unit assisted the Law Enforcement Division in their audit of the Taber police department.

DEPARTMENTAL SUPPORT PROJECTS

Work has now been started on the Employee Relations sub-system. The work plan for this sub-system extends to early in the new year and will provide for grievance tracking and disciplinary proceedings. Extensions to the position sub-system are continuing. PIMS on-line components are being extended to employee relations and occupational health updates as well as additional on-line report capabilities.

ANSWERS TO FOUR TIMES NINE

1 =	$(9+9) \div (9+9)$	11 =	$99 \div (\sqrt{9} \times \sqrt{9})$
2 =	$(9+\sqrt{9}) \div (9-\sqrt{9})$	12 =	$9 - \sqrt{9} - \sqrt{9} + 9$
3 =	$(9+9+9) \div 9$	13 =	$9 + \sqrt{9} + (9 \div 9)$
4 =	$(\sqrt{9} \times \sqrt{9} \div 9) + \sqrt{9}$	14 =	$(99 \div 9) + \sqrt{9}$
5 =	$(9-\sqrt{9}) - (9 \div 9)$	15 =	$(\sqrt{9} + \sqrt{9}) \times \sqrt{9} - \sqrt{9}$
6 =	$(9 \times \sqrt{9} \div 9) + \sqrt{9}$	16 =	$(9 \div 9) + \sqrt{9} + \sqrt{9}$
7 =	$(9 \div 9) + \sqrt{9} + \sqrt{9}$	17 =	$9 + 9 - (9 \div 9)$
8 =	$(99 \div 9) - \sqrt{9}$	18 =	$(\sqrt{9} + \sqrt{9}) \times 9 \div \sqrt{9}$
9 =	$(\sqrt{9} \times \sqrt{9}) - (9-9)$	19 =	$9 + 9 + (9 \div 9)$
10 =	$(\sqrt{9} \times \sqrt{9}) + (9 \div 9)$	20 =	$(99 \div 9) + 9$

For Your INFORMERation

Although the population of Alberta was only 9.2% of the population of Canada in 1981 according to preliminary figures released by Statistics Canada, Alberta accounted for 17.2% of the actual number of impaired driving offences reported in Canada that year.

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In 1982, only one-quarter of the motor vehicle thefts in Alberta were cleared by the police.

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Of the 25,601 admissions to provincial correctional facilities during 1982, 91.7% were males and 8.3% were females. Of the 15,582 admissions who were eventually sentenced, 93.4% were males and 6.6% were females.

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DeMorgan's Law

The NOT of an AND is the OR of the NOTS.

The NOT of an OR is the AND of the NOTS.

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